

VOLUME XCVI

NUMBER SIX

THE NATIONAL GEOGRAPHIC MAGAZINE

JUNE, 1948

Map of the North Central United States

Midshipmen's Cruise

With 5 Illustrations

40 Natural Color Photographs WILLIAM J. ASTON and
ALEXANDER G. B. GROSVENOR

Sea Bird Cities Off Audubon's Labrador

With 12 Illustrations and Map

19 Natural Color Photographs

ARTHUR A. ALLEN

Luxembourg, Survivor of Invasions

With 15 Illustrations and Map

SYDNEY CLARK

Cloud Gardens in the Tetons

With 9 Illustrations and Map

16 Natural Color Photographs

FRANK and JOHN CRAIGHEAD

Mapping the Nation's Breadbasket

With 14 Illustrations

FREDERICK SIMPICH

The Society's New Map of the North Central United States

Fifty-six Pages of Illustrations in Color

PUBLISHED BY THE
NATIONAL GEOGRAPHIC SOCIETY
WASHINGTON, D. C.

\$5.00 A YEAR

50¢ THE COPY

THE NATIONAL GEOGRAPHIC MAGAZINE

COPYRIGHT, 1948, BY NATIONAL GEOGRAPHIC SOCIETY, WASHINGTON, D. C. INTERNATIONAL COPYRIGHT SECURED



Midshipmen's Cruise

By Midshipmen WILLIAM J. ASTON AND ALEXANDER G. B. GROSVENOR, USN

SHOVE OFF, coxswain. Return to the sea wall," sang out the Junior Officer of the Deck of the U.S.S. *New Jersey*. About him was the clamor and confusion of the launch's load of midshipmen trying to locate sea bags, suitcases, and blue service uniforms heaped in pyramids on the forecastle.

The motor launch, empty now of its cargo of human freight, with a roar headed back to the United States Naval Academy dock in Annapolis, Maryland.

Wistful glances followed her wake as she gradually grew dim in the rainy mist of that early Saturday morning, June 7, 1947. Some fellows, perhaps a little homesick, tried to bring to life the last beautiful image of the June Week O.A.O. (one and only). But the eager ones were already heaving sea bags down the forehatch, glad to be away from the confining walls and books of the Academy and bound for foreign shores.

Ever since Rear Admiral James L. Holloway, Jr., Superintendent of the Academy, had announced our cruise plans, all hands had been enthusiastically awaiting this day.

Edinburgh, Oslo, Copenhagen, London—glittering names lay ahead. Now with our task force of two battleships, *New Jersey* and *Wisconsin*, the carriers *Randolph* (flagship) and *Kearsarge*, the LSD *Fort Mandan*, and four destroyers, 2,100 midshipmen showed off for their first taste of a sailor's life and travels (Plate I).

The new second class (juniors) enjoyed the sunbathing on the flattops (Plate XV).

Our division of 60 youngsters (third classmen, or sophomores) and first classmen (seniors), plus 10 Reserve midshipmen from various colleges, was quartered forward of *New Jersey's* No. 1 16-inch gun turret. Our pipe bunks—and they were comfortable too—were stacked in tiers of four, lining the bulkheads

(walls or ship's side) and grouped compactly in columns, fore and aft, two tiers wide, but with enough room to scot out quickly.

We were each assigned a locker, so tiny it left us skeptical. How could we cram all the gear in our two bulging bags into that small space? Nevertheless, after much refolding and rolling, our "white works," "skivvies," etc., were squeezed in.

One of Uncle Sam's battlewagons is a self-contained, multi-decked machine. Think of it as being divided into thirds. The superstructure, with its bridge and command stations, is the brain. The middle third (first two decks below main deck) feeds and repairs the two other sections. Lastly, the lower division, with its turbines, boilers, and generators, energizes the ship.

We Learn Our Way Fore and Aft

It was three or four days before we could step through watertight doors from one compartment to another without bruising our shins. But it took longer to master climbing and descending ladders (no stairs!) from one deck to another without use of seat, elbows, and gravity.

Shipboard navigation, taught by personal experience, was not learned by many for weeks. We were in England before some of us found the cobbler or tailor shops. During a pre-cruise lecture a humorous instructor said that to survive the cruise we must learn the location of only three places: our bunks, the chow line, and the "head." We all survived.

A frequent question of the late war was, "How can Halsey and Mitscher stay at sea so long without refueling at a base?" Now it is an everyday trick to transfer millions of gallons of fuel from a fleet oiler to thirsty battlewagons while under way. Our first dem-



U. S. NAVY OFFICIAL

Midshipmen Leave H.M.S. Victory's Entry Port and Walk down the Brow (Never Gangplank!).

A latticelike series of gangway steps, or battens, enabled men to climb aboard. Muzzle-loaders peep from three gun decks. Each of the three masts has a fighting top (upper right) where some ships stationed marines to fire muskets during battle. A ball from such a French top killed Lord Nelson at Trafalgar (page 719 and Plate XXIX).

onstration occurred a day out of Annapolis.

Sunday morning, on coming topside for our first look at the Atlantic, we were greeted by a startling sight. Dead ahead steamed a Navy oiler, the huge *Winconsin* surging close to her portside. At first glance they seemed about to collide, but then we saw they were laced together with snaky black lines (Plate X).

Slowly our skipper combed the *New Jersey* into position on the opposite side. Inch by inch we crept up, until we were only 100 feet from the oiler's bridge. Because of the armored conning tower, steersmen on duty could see only dead ahead, so they never knew how close the steel monsters were. Eyes glued to compasses and ears tuned to captains' voices, they kept the ships on steady course hour after hour. A veteran officer told us that even in wartime simultaneous refueling of two battleships was as rare as "sun off Cape Horn."

Our big ship supplied its destroyer escorts with fuel throughout the cruise. What a sight it was to see a "can" bucking the waves as she received her oil transfer!

These sleek ships swung up from astern, turned parallel to us, and slid over to within 20 feet of our life lines. Then, as they stuck their sharp noses into every wave, we fired lines from our heaving guns over their fore-castles.

Quickly the crews pulled over hoses, and the cans were sucking alongside the mother ship. Waves breaking over the destroyers made it a risky and slippery job for the line-handling crews (Plate VIII).

Less Romance, More Work

Some landlubbers imagine that midshipmen's cruises are luxury voyages. Admittedly, foreign ports are romantic; but long days of work at sea are far from luxurious.

On last summer's cruise the youngsters received instruction from three academic departments—Seamanship and Navigation, Ordnance and Gunnery, and Marine Engineering—for a month each (Plate IX).

Our "seamo" course qualified us for the rating of seaman, first class. We lived the lives of deckhands, did their jobs, stood their watches. Thus we began learning the Navy from the bottom up.

Our watches, stood four hours on and twelve off (instruction periods were attended when off duty), ranged through 32 different stations, from a lookout in the clover leaf (the tiptop level of the mast) to a life buoy watch at the rail or assistant helmsman on the bridge. Many of us found our spell at the wheel the most thrilling job. It was quite a trick trying to hold that monster within a degree of her course.

We all favored Ordnance and Gunnery. Besides being out in the air most of the time, we stood no watches.

During the day's three hourly drills we became familiar with the ship's guns, perhaps by a tour through a monstrous 16-inch gun turret or by actually tearing down and cleaning a 40-mm. antiaircraft gun. Often we viewed training films and studied for and passed the tests seamen must take to become third-class gunner's mates.

In Marine Engineering we experienced our most uncomfortable conditions. This was particularly true for those lads down below when tropical climate prevailed.

To familiarize midshipmen with the "works" that make a mighty battleship tick, we stood watches at nearly every engineering station, from tending a blazing boiler to jockeying a turbine throttle in an engine room. We weren't long discovering how to brew the black gang's favorite drink, "Joe" (coffee). We gulped it beneath a roaring air blower and soon kept pace with the crew, sometimes drinking 10 cups a watch.

Reveille! Grab a Brush!

"Reveille! Reveille! Heave out and trice up." Dim ruby battle lamps blink off, and blinding overhead lights flush on.

You glance at your watch—5:30. It's too early, oh, for a few more minutes' sleep! You roll over, hoping . . .

"Hey, mister! Hit the deck! Make up that bunk and clear the compartment."

You stumble around trying to sort out your dungarees from piles of your shipmates'.

Ten minutes after reveille the Navy is after you again.

"Turn to! Scrub down all weather decks! Clamp down all living spaces!"

You stagger up through the hatch and greet the morning. Your fervent hope of meeting a torrent of rain (your only escape from scrubbing) is shattered by the glaring sun.

Finally you reach your division's cleaning area. Any fellow earlier than you already has the deck awash. Last thoughts of sleep die out when the hose tender arches a chilly stream of water over your shivering bare feet.

A bosun's mate bawls for action. "O.K.! O.K.! Grab a brush and get moving."

A few of you jam sticks (the standard Navy handles) into scrub brushes and, with a hose backing you up, you soon have the area covered. Others follow the brushes, clearing oil the water with rubber squeegees. If any salt streaks appear on deck, the job has to be done over again (Plate VI).

Just before the first call to breakfast, the bosun's mate grumbles, "O.K., secure! Every-

body on deck sooner tomorrow morning."

Breakfast!

Long before the bosun's shrill call to the first mess, two chow lines begin to form on either side of the ship. Soon they lead all the way to the stern and double back, so the hindmost man actually heads away from his meal.

Folding benches and portable tables fill the eight mess compartments, which between meals double as classrooms, theaters, and places of worship (page 718).

To feed the crew expeditiously, serving is done cafeteria style.

If you're in a hurry, you may stow your chow in five minutes; lingering is not encouraged. The entire crew must be fed in three chow calls, each 15 minutes in length.

For heavy eaters, survival depends on the number of times they contrive to go through the line. A tasty dessert always means a lasting line.

Seagoing Housemaids Have a Field Day

Field day, to one who doesn't know the secret, sounds like a day of merrymaking or suggests a track event.

But field day in the Navy serves the ship as a housewife's weekly cleaning day. Every bulkhead is scrubbed, paintwork washed, all brightwork polished (Plate VII). Last, but not least, the teak decks are holystoned.

This nautical word may be familiar, but have you ever seen a holystone in action? From painful memory, every admiral can give a vivid description of the tool.

Wooden decks once were holystoned every day, but heavy wear by sand and stone meant expensive replacements. Therefore, today's seamen turn to with their "boiler bricks" and bent backs but once a week.

To holystone, one needs equipment valued at less than a quarter and a 30-second lecture, including instruction in elementary wrestling. The instruments of torture are a long stick, sand, water, and a halved fire brick. The stick fits a small hole in the brick.

Do you want to learn the proper grip and stance? O.K., bend over double and take hold of a broom with your left hand about 18 inches from the bottom. Then place the upper half of the handle against your right hip. With your right hand, reach under the stick and grab your left wrist. This hold, a perfect double-arm lock, enables you to push down on the stool and at the same time slide it back and forth sideways.

Five to 30 midshipmen line up along a plank (page 716). With one to count cadence, the entire group should move in rhythm. But there's always some knucklehead who delights in doing things the opposite way.

The stroke is about 20 inches, right, left, right, left, until 20 passes are made. Then with the command, "Shift," the men step back or forward together to the adjacent plank.

This work is as backbreaking as any ever devised, and there is no way to beat the system. Should a fellow slack up, the stick slips and trips the brick, snuffing the rhythm.

Field day for those down in the engine spaces is certainly the most unfavorable aboard ship. Its dirtiest form is boiler-tube cleaning. Stripped to their waists and armed with wire brushes, the black gang worms through a small hatch into a jet-black boiler. Here, with an extension cord and bulb for illumination, the lads scrape the carbon-caked water tubes. Often a chisel is needed to loosen the scale. The work isn't as back-breaking as holystoning, but it is certainly the dirtiest aboard ship.

Or you might find yourself confined down in the bilge, or double bottom, scraping rust and cracked paint and then repainting. A mixture of slime and yellow chrome forms a colorful but greasy coating on blue dungarees.

Now you can understand the luxury of drawing a morning or afternoon watch on field day.

We Drill with Dummy Guns

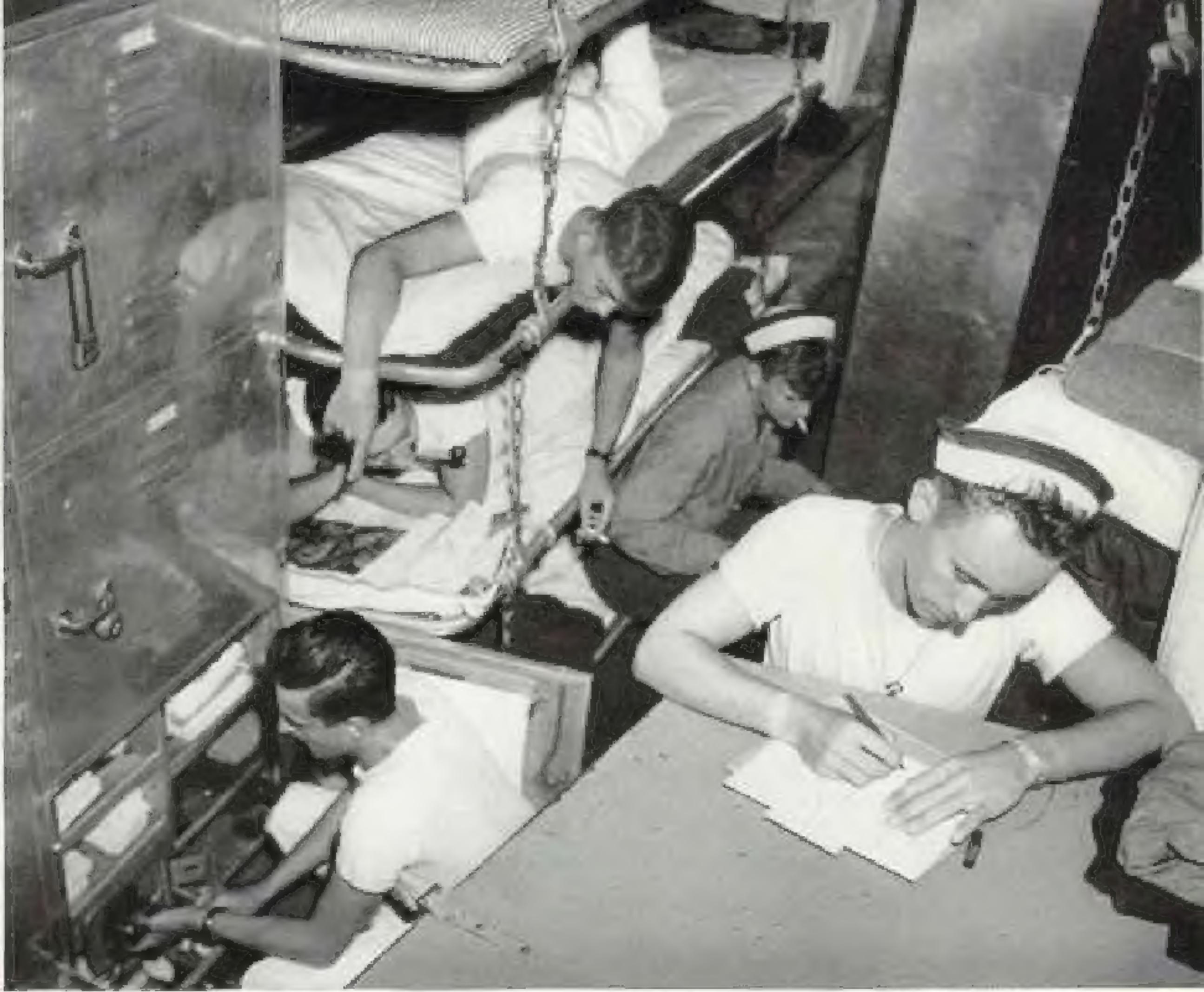
After two weeks at sea we took over the defense of the ship. With the exception of officer safety observers, the 40-mm. antiaircraft guns and dual-purpose (air and surface firing) 5-inch batteries were manned by youngsters and first classmen. So were the nine 16-inch guns in the three turrets.

Daily drills soon made us as proficient as the ship's company crew. At the first note of General Quarters, we double-timed to our mounts and turrets. Unless actual firing was scheduled, we practiced training the guns and simulated loading and firing them.

But you don't learn to load these weapons by tossing live ammunition around—you might burn your fingers! So for the first two weeks we viewed Navy training films and practiced on loading machines (Plate XI).

These dummy gun mounts produced only loud and annoying bangs. Tangible products were bruised toes and sprained fingers. Using dummy powder bags and counterfeit shells, the 5-inch loading machine operated with seemingly perpetual motion, its "firing" halted only by an officer whose stop watch was our whip (Plate XII). Two men heaved a powder bag and shell into the breech; another "fired" them forward into the hands of two others. The operation grew monotonous, but efficient.

Our targets usually were red sleeves about



ALEXANDER G. H. GREENBERG

New Jersey's Cruising Youngsters Bunk Sardine-fashion in Tiers of Four

Each man has a locker so small that he wonders how he can cram all his gear into it (page 711). One lad uses a peacock locker top, his compartment's popular card table, as a writing desk.

30 feet long, towed by carrier planes. As a special treat, tiny drones were launched from catapults aft (Plate XIV). These radio-controlled planes, guided by an aviator on New Jersey's fantail, made kamikaze-like passes over the ship from every angle. Pursuing erratic courses, they were harder to knock down than the sleeves.

"Hummingbirds" Deliver the News

"In the old days, when I was at sea . . ." Who hasn't heard these words from some salt-crusted seaman of yesteryear? Imagine what he'd say if he saw a helicopter delivering the morning newspaper!

Each day around 0630 (6:30 a.m.) one of these mechanical hummingbirds, operating from the *Randolph*, made the rounds of every ship, delivering packets of guard mail and the *Cruise News*, the squadron's daily newspaper.

Transfer of mail took only about 30 seconds. On approaching the ship, the co-pilot lowered a satchel by hand. Petty effects on New

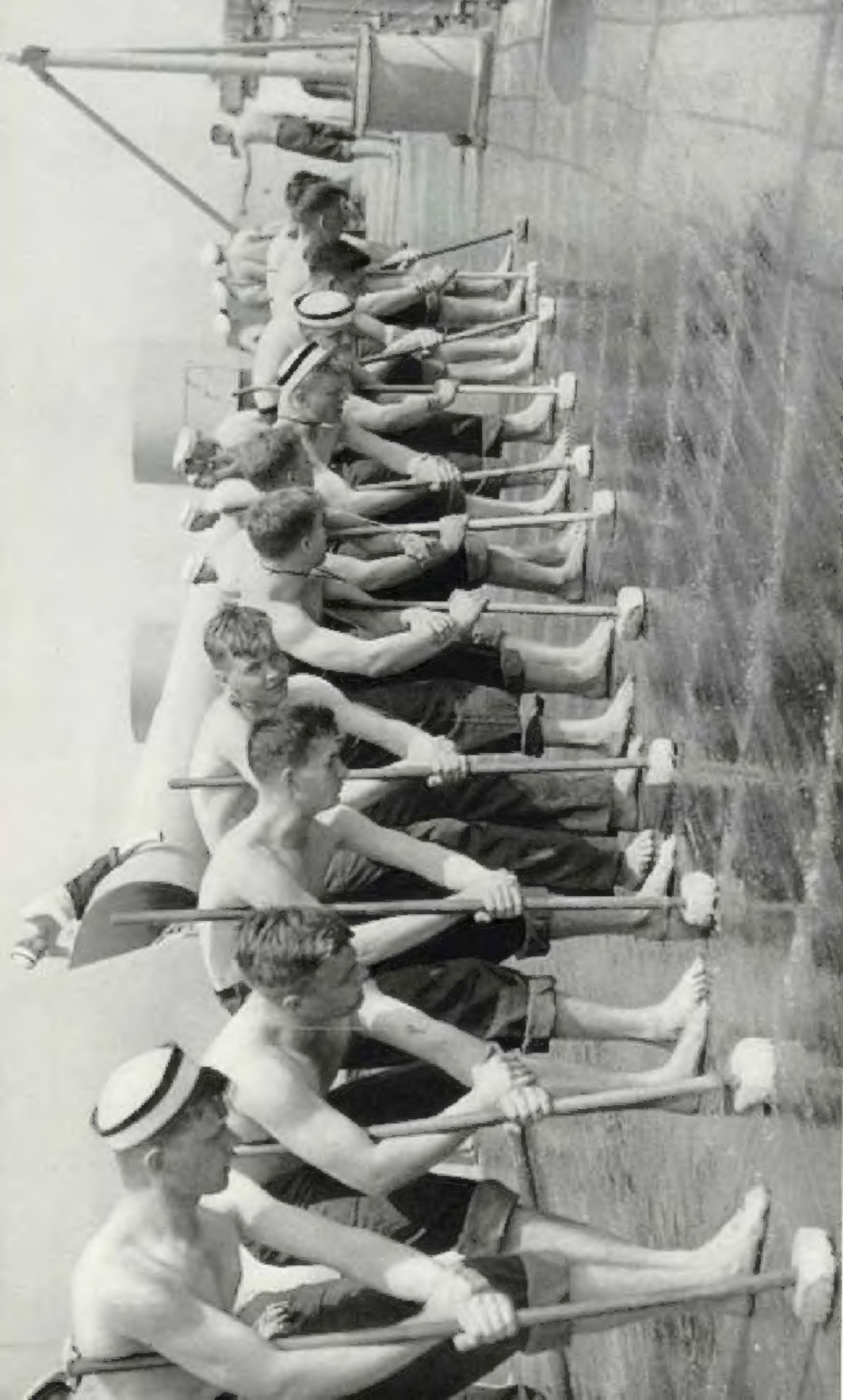
Jersey's forecastle detached it and hooked on their own outgoing mail.

Occasionally, too, a hitchhiking officer was dropped off or picked up (Plate VIII). While the 'copter hovered above the deck, a steel line was lowered by winch mounted on the helicopter's roof and hooked to a linen strap under the arms of the passenger. Then the pilot hoisted him until he could swing into the cockpit.

Our first landfall in the British Isles was Butt of Lewis, northernmost point of Lewis, largest island of the Hebrides. In a few hours the sheer cliffs of Cape Wrath drew abreast as we continued eastward to Dunnet Head, sentinel of the western approach to Pentland Firth.

It was a beautiful Sunday morning when we entered this 7-mile gap between the Orkneys and the mainland. The waters just inside the Firth were so placid it was difficult to believe the warning of the *British Islands Pilot*, which cautions vessels, in fair weather or foul, to expect extremely turbulent waters.

Arms Locked Around Sticks, Youngsters Polyestone Wisconsin's Deck. One in Line, No One Can Shift This Buckbreaking Job.



Milkies Monologues Elizabeth and Her Finance

Last summer twenty lucky milkmen were invited to the Buckingham Palace garden party honoring Princess Elizabeth and Lt. Philip Mountbatten.

Here three Americans (center, right) have joined the Princess's side. Mountbatten (in Royal Navy uniform) stands at her right. "Their naturalness and frankness nature quickly put us at ease," one of the milkmen said. "Soon we were chattering away and even joining . . . our talk, which lasted 10 or 12 minutes, was finally interrupted by the Redating usher, who realized we had more than tripled the maximum allotment of time."

Later the Americans proceeded to rescue Princess Margaret Rose from her seeming lassitude. Said one: "I was tempted to ask for a date, but courage failed me."

For once, the King is not the main center of attention. He stands at left center talking with civilians (page 720).

STANISLAW RUDOLPH





Alexander G. B. Grossman

Chow Time Knows No Slackers; Every Man Aboard Ship Does His Duty Nobly

Performance is especially noteworthy whenever the Navy serves a tasty dessert; then some men go through the cafeteria line twice (page 714). Even in hot weather, many of these lads drink a dozen cups of coffee a day.

The most treacherous spot is a narrow, ever-shifting belt where the 7-knot current from the North Sea clashes with tides moving in from the Atlantic. The rocky coasts of northern Scotland and the Orkneys act as a funnel, causing the waters to converge in the Firth.

This belt of water is marked with violent eddies and treacherous whirlpools. Even with such splendid weather as we enjoyed, our 45,000-ton ship was twisted like a small steamer. Steering was difficult; standing required a balancing act.

Next morning we entered the Firth of Forth, the main estuary on the east coast of Scotland. Sir Walter Scott and Robert Louis Stevenson sang the praises of the view from the Highlands, where the Forth lies spread out "like a blue floor," bordered by golden sands and green fields.

Task Force 81 entered the Firth on a gray, rainy day. We saw, not the golden sands or blue floor, but only a cold gray blanket, spotted here and there by brownish hamlets

and dark, sleeping ships. Ahead arched the Forth's famed cantilever bridge (Plate XVII).

As we sailed below, our mast almost brushing the span, five hooky-playing Scottish children leaned out and waved a large American flag. So slight was our clearance that they could almost have stepped down into our lookout tower.

Those smiling youngsters typified the Scotland we saw during our visit. Scotland to us was a land of rugged scenery and never-shining sun. Its fiercely proud, liberty-loving people made us feel at home in this, our first port of call (Plates XVIII to XXV).*

Oslo Welcomes the Middies

Just before breakfast on June 30, two days out of Rosyth, our two battleships swung north into Oslofjord, leaving the Skagerrak astern. The other ships of our squadron had

* See, in the NATIONAL GEOGRAPHIC MAGAZINE, "Bonnie Scotland, Postwar Style," by Isobel Wylie Hutchison, May, 1946.

left for ports in Denmark and Sweden.

Some 20 miles up this deep, forest-banked fjord, we exchanged salutes with Karljohansvern, headquarters of the Norwegian Navy.

Scores of graceful sailboats, heeling gently to the morning breeze, joined in welcoming us to Oslo. Friendly cheers were frequently exchanged, particularly when a boat's crew was feminine.

Our 5-day visit to the Norwegian capital was highlighted by shopping sprees, social functions, and country tours. Bartering with the store clerks wasn't difficult, as English was fairly well known. Most of us sought brilliantly decorated ski sweaters and Norse winter outfits. It seemed strange to see skis being brought on board in the evening by perspiring new owners.

Some of us took an electric train up to Frognerstøren, on a hill northwest of Oslo, which is a center of Norway's famous winter sports.

Looking down some 1,500 feet, we beheld a panorama of rare beauty. Our view stretched 50 to 70 miles about the compass. To the east the pine-covered hills of the Swedish frontier dotted the horizon. To the south lay Oslo, its fjord winding away into the distant mist. Our anchored battleships seemed tiny and insignificant.

Viking Ships Re-create the Past

Oslo gave a round of dances and parties in our honor. At the American Embassy's dance, two Navy orchestras from the squadron played our favorite numbers. Norwegian girls, beautiful as they were gracious, danced with us to the strains of American music.

Oslo's hospitality seemed to have no limit. There were few middies who didn't enjoy a home-cooked meal. One mother insisted that a midshipman date her son's fiancée while the poor lad remained home!

To many, Oslo's museum of Viking ships was the most interesting sight in Norway. Found entombed in blue clay near Oslofjord, these relics offer standing proof of Norway's early maritime prowess.

When Viking chieftains died, they were often buried in their ships, along with their possessions. The Oseberg ship contained such an abundance of articles that it gave a reliable picture of the daily life of the Vikings around A. D. 800.

A more advanced link in the country's nautical history we found at the Fram House. The *Fram*, built in 1891-92, was specially designed for polar exploration and built by Colin Archer, of Larvik. At points her sloping sides are almost a yard thick. Her hull

is rounded so as to rise out of the ice if squeezed by the pack. When the *Fram* was frozen in on Dr. Fridtjof Nansen's polar expedition (1893-96), its scientific design and structural strength enabled it to overcome ice pressure that would have crushed conventional ships.

A visit to the Royal Yacht Club on the Frognerkilen would excite any sailor with admiration for the seafaring Norwegians. Here we found a fleet of 6-meter and 20-square-meter boats. The navigators of the clumsy Viking longboats would have gaped in awe could they have seen these slim, graceful sailboats skimming along in the class races.

Our Norwegian visit ended with a dance on the *Wisconsin*. "Wisky's" decks, surrounded by decorated life lines, presented an unusual dance floor. Lights and signal flags gave color to the scene. A lavish spread in the officers' wardroom satisfied the hungriest "chow hounds."

Leaving Norway, we witnessed a magnificent demonstration of seamanship. Crown Prince Olav reviewed our battleship division as we steamed for Portsmouth, England. Rather than use a destroyer or a large yacht, he stood in the cockpit of a 50-foot cruiser tossing and yawing in the choppy mouth of Oslofjord.

Throughout the passing of our ships, the Prince adhered to the adage of the sea, "One hand for the ship and one for yourself." Never before had we seen a boat do four-dimensional gymnastics. Yet at all times the Prince had his right hand raised smartly in salute as *Wisconsin* fired the 21 guns reserved for chiefs of state and for royalty.

Nelson's Victory Almost 200 Years Old

During our stay in Portsmouth, most midshipmen visited H.M.S. *Victory*, Nelson's flagship at Trafalgar. At the time of her launching in 1765, this 2,162-ton man-o'-war was the fastest first-rate of her size in the Navy. Others had gun decks 175 feet in length, but *Victory's* was 186 feet. The added length gave her finer lines and extra speed.

Midshipmen were given the run of the ship. Those who desired could join tours conducted by British petty officers.

Interesting yarns could be coaxed from the guides. We were told, for example, that strict naval etiquette was enforced aboard a flagship even in Nelson's time. An admiral always walked on the starboard side of the quarter-deck. But Nelson, disliking protocol, was often seen on the captain's side. This custom perhaps accounted for his death. At Trafalgar

he was encroaching on Capt. Thomas Masterman Hardy's promenade when he was mortally wounded by a French sniper's bullet.

In descending from the weather deck, we saw batteries of muzzle-loaders, above which Victory's crew of 800 men strung their hammocks. The two lower gun decks, crowded as they must have been, were often their home for years.

In the gun room we saw the crude muscle-powered steering apparatus used to navigate the ship in emergencies. Her wheel shot away by a French broadside, Victory was steered at Trafalgar by men pulling on tackles attached to this monstrous tiller.

On the lowest of the five decks, the cockpit, Nelson died. The wounded admiral early in the battle was carried below to the pit (sick bay). Here, within a few feet of the midshipmen's mess, Nelson spoke his dying words: "Thank God, I have done my duty."

Close by we noticed crude instruments used by surgeons of Nelson's time. The most impressive thing about the pit was the illumination the ship's surgeon did not have. If you would enter a dark coal bin and attempt to read this magazine with the light from one small candle, you would understand the difficulties experienced by Victory's surgeon, Mr. Beatty, as he worked during battle.

On the bulkhead hung a painting, executed from eyewitness accounts, showing the death of Nelson, with his surgeon, aides, and Captain Hardy grimly grouped about him.

As our tour ended, one midshipman remarked that Nelson's sailors were lucky—they had no hot, noisy, chattering watches to stand. We all agreed wholeheartedly, until a ship's officer told us it was not unusual for large men-of-war to spend two or three days crossing the three miles from Spithead into the Dockyard. Later we learned that Jack-tars' wives often came aboard at Spithead and stayed until the ships docked.

Several midshipmen attended a dinner aboard Victory. Their host was Admiral Lord Fraser, Commander in Chief of the Portsmouth area, who flew his flag in Victory. In wartime Lord Fraser was the Commander in Chief of the British Pacific Fleet. Lately he was appointed First Sea Lord.

One of the fortunate midshipmen reported:

"We were welcomed by the C.O. and taken aft to Lord Fraser's cabin, the same cabin Nelson used at sea. Here we chatted with the Admiral and his other guests before entering Nelson's dining cabin, just forward of the main cabin. His silverware, candelabra, and table pieces were used that evening; and we dined and wined in the same manner as did Lord Nelson and his captain."

Admiral Fraser spun a yarn recounting Victory's role at Trafalgar, where she and her attendant ships wrecked Napoleon's plans for invading England. Later he stated of a recently repaired wound in the hull: a memento of Hitler's blitz of 1940.

Princess Elizabeth Greets Midshipmen

Twenty midshipmen consider themselves the most fortunate lads in the squadron—they attended the King's garden party at Buckingham Palace (page 711). Here's how a royal guest depicts the memorable occasion:

"Our group of 20, headed by a Navy 'corporal,' was comprised of ranking first classmen, class officers, and a few youngsters. As we passed through the palace gate, we encountered throngs of Britons, eager for a glimpse of the newly engaged Elizabeth and Philip. Eight thousand dignitaries formed an almost impregnable barrier around the rear of the palace. The great number of guests surprised us, we had expected a small, informal party, and everyone had envisioned long chats with the Royal Family. What an illusion!"

"Princess Elizabeth, with Lieutenant Mountbatten at her side, and King George emerged from the palace and began filtering through the crowd, with an army of ushers opening a path as they slowly advanced across the spacious lawn. Also included in the royal party were a number of ranking military officers, their duty being to select a few from the encircling throng and present them to Elizabeth and her fiance or to the King."

"Our midshipmen's group had long since dissolved, each seeking to get the closest view of the royal party. While elbowing my way into the path of the slowly advancing group, I noticed our captain had caught the eye of an ushering Air Force officer. This unexpected opportunity of meeting the Princess and her fiance was not to be lost because of the intervening crowd. By a bit of fancy dodging and ducking and numerous apologies I was soon standing nervously with two other shipmates, waiting to be introduced to Elizabeth and Philip."

"After the presentation, their naturalness and friendly nature quickly put us at ease. Soon we were chatting gaily and even joking as if with an old acquaintance. Philip seemed extremely interested in the Academy, and we swapped a few tales of Dartmouth and Annapolis. When questioned about his class ring one of the first classmen slid his off and, handing it to Philip, explained the tradition of it and its presentation at the famed June Week ring dance by his O.A.O."

"Not to be outdone by her fiance, Elizabeth inquired about the class insignia worn on the

dees of the two upper classes (mine still being quite bare from plebe year).

"Our talk, which lasted for 10 or 12 minutes, was finally interrupted by the fidgeting ushers, who realized we had more than tripled the usual allotment of time. With words of congratulation and good luck, we moved off into the crowd."

As if meeting Elizabeth and Philip wasn't enough, our guest continues:

"Later in this eventful afternoon, a few of us were able to penetrate the cordon about the other royal group with Queen Elizabeth and Princess Margaret Rose in the center. Upon being presented, two of us 'plaintly' proceeded to rescue Margaret from her seeming boneclaim. I was tempted to ask for a date, but not having experienced royal reactions to such a bold request, my courage failed me."

"Soon the Royal Family terminated their interviewing and sought refreshments under the awning of a spacious tent, similar to the many caterers' tents that bordered the lawn. Reports have it that the midshipmen carried out a like action with 'great boldness, fierce determination, and clever maneuvering.'

"The number of midshipmen who 'forgot' or 'misplaced' their raincoats was astounding anything for a last fleeting glimpse of the beautiful and ornate palace interior. On agreeing that 'Operation Buckingham' had been completed successfully, we 'shoved off,' armed with a story for our grandchildren."

Down to the Bally Tropics

Within a week after leaving England we were south of the 30th parallel, basking in the tropical sun and watching hundreds of flying fish skimming along the Gulf Stream.

In the afternoons you saw only two types of working youngsters: those carrying ammunition and others firing the never satisfied guns.

By nightfall all hands were ready to gather aft near the movie screen and enjoy an hour or so with Hollywood's stars of the present and past.

Our theater was improvised and didn't have a ticket window. Our "inexpensive" seats were sections of the deck; the "reserved seats" were boxes and benches borrowed from the mess halls; and the balcony was atop the No. 3 turret or the roof of the steel projection booth, the only permanent fixture of our theater. Although we didn't have murals on all sides and '20° cooler inside' air-conditioning, we did have a glistening canopy of stars and the night-cooled trade winds.

The warmth of the Tropics once more brought our Sunday services up to the fantail from a confining chow hall below. Your

imagination may fail you if we say shipboard services are sometimes beautiful. Picture, however, this scene:

The spell cast by a burring organ, deep masculine voices, and the sound of the gentle swishing and lapping of waves falls upon you as you kneel to worship. Beneath the cloaked muzzles of 16-inch rifles stands your chaplain behind his lectern. Close by is his small portable altar. As he delivers a short, pithy sermon, a golden sun beams down from a clear blue sky. A faint breeze cools your face. Your eyes catch a rolling destroyer to starboard. Again the choir sings a familiar hymn and the service is over (Plate XVI).

Before long *New Jersey* dropped her hook in Guantánamo Bay, Cuba.* We were permitted to go ashore in our "white works," a comfortable summer uniform distinguished from an enlisted man's whites by the blue band around the top of the hat (Plate IV).

Leaving the fleet landing, we had our choice of two roads, one running east to the Navy recreation center and its ships' service store, the other going west to the marine post and PX.

At both facilities, ice cream, canned fruit, and 35-cent steak sandwiches were plentiful. Stores were well stocked, and smart lads who saved their cruise allowance could now take advantage of Guantánamo's bargains. Most of our gifts for the folks at home were bought here tax free.

During our first liberty the youngster class was introduced to Chief Hickey, a famed Indian chief of early Spanish days, whose face (mostly now) adorns bottles of Cuban beer sold on the station. There's a saying that "you can't beat the Chief—he always wins." After a few of his beers we understood why.

We Bombard Culebra, a Target Island

On our departure from Cuba we began gunnery practice in earnest. Now we were going to find out if all the hours spent on dummy shells had been worth while. For the first time the big 16's were to be fired.

Our target was Culebra, a small island off Puerto Rico reserved by the Navy for fleet gunnery practice. We commenced bombardment at 0930 one clear morning.

We saluted up and down our firing track riding our 3 inch and 16-inch shells into the beach. Control officers and range-finder operators kept a close watch on *New Jersey's* shooting as well as on the work of her sister and rival, *Wisconsin*.

Shortly after noon, our mission completed,

* See, in the *National Geographic Magazine*, "Cuba—American Sugar Bowl," by Melville Beals, January, 1947.

"Secure from General Quarters" was piped through at the ship.

That afternoon the Task Force rendezvoused and we steamed off. We were on the road back.

Virginia Gives the "Welcome Back"

On August 12 the Virginia coast materialized out of the offshore mist.

As if trying to surpass European hospitality, the people of Tidewater Virginia went all out to entertain the midshipmen. Norfolk gave two grand balls.

Virginia Beach was swamped with midshipmen and their hostesses. Rare was the fellow who couldn't boast that he had been looking at the pinups, including his own business, when a beautiful girl drove up in a shining convertible and asked, "Going to the beach?"

We devoted the last week of our cruise to night gunnery and submarine warfare. All men in the first class were dispersed among destroyers and submarines. The rest of us were assigned to antisubmarine lookout watches.

During the day the U-boats split up, five to each of the two battleships, and simulated attacks on us. They fired dummy torpedoes set to run five feet below our own run draft.

Many of us believed that spotting a periscope was an easy task. Experience revealed our error.

In establishing a position to fire her "fish," a sub raises its periscope only momentarily. Even if a lookout knows the scope's position, he has a difficult task picking out that "eye" among the whitecaps.

There were many tales in evening "ball sessions" of a lookout's spotting a submarine by first detecting a torpedo speeding at his ship.

"To fish" travel about 45 knots, and their trail of air bubbles appears about 75 feet behind, depending on the depth. We were thankful they had been set too deep; otherwise, as many as 10 a day would have made direct hits.

We all came to appreciate the effectiveness of the Navy's underwater fleet. Show is the man who doesn't respect the torpedo speeding directly at him!*

After sandbagging the 5- and 16-inch batteries were put to work firing on target sleds towed by tugs.

These night-firing exhibitions were spectacular and, in fact, enjoyable once we got used to the roar of the 16's and the ear-splitting cracks of the secondary battery.

Festivities began with the 5's firing star shells to light up the target. Then, its turrets trained, the main battery let go with 2,700-pound calling cards.

These weighty shells are sped by brilliant orange flames flashing 30 feet beyond the muzzle. Instantly, light vanishes, and the ship is left in darkness. As your ears recover, you hear the shell cleaving the distant atmosphere. The sound resembles the swoosh of a jet plane. Long after firing has ceased, you remember the shell's weird moan.

Midshipmen Get Air Training

Meanwhile the second classmen, quartered aboard the carriers, were getting instruction in naval aviation. In Avengers and Hellcats they made observation hops lasting two to three hours. The purpose of these flights was to acquaint them with air power's role in naval tactics.

Riding rear seats, they were in constant communication with their experienced pilots, who gave them a play-by-play description of what was going on. Before each flight they were briefed in ready rooms along with the pilots, and on landing they returned to get a full explanation of the maneuvers.

Four days out of Annapolis one plane went into the drink. Within five minutes pilot and midshipman were picked up by a destroyer, while an anxious helicopter hovered overhead.

Between firing runs we cleaned, scrubbed, and painted *New Jersey* to make her shipshape for homecoming.

Before, first class had told us, "Scrub that hatch," but now our class ran the show. Classmates served as division officers and bosun mates.

Realizing that leave was but a few days away, we sang lusty chanteys as we worked. Decks and brass were never cleaner.

Jersey's Anchor Rattles "Home"

As the Task Force strained up Chesapeake Bay, we packed our gear and said "So long" to the Navy regulars who had been our shipmates.

We appeared off Annapolis the night of August 25-26, and, as tradition demands, the senior class's "anchor man" (who has the lowest standing) knocked open the pelican hook of the anchor chain. The huge links rattled across the forecastle and the boat splashed home.

Dawn lit the Chapel dome and the radio towers on Greenbury Point. Motor launches put out to meet us. Midshipmen's cruise was over.†

* See "Our Navy at Peace Insurance," by Fleet Admiral Chester W. Nimitz, *National Geographic Magazine*, June, 1946.

† For additional articles on the U. S. Navy, see "National Geographic Magazine Cumulative Index 1919-1946."



Goodbye, Texanicks—Here, Salt Water! 21st Midshipmen Start a Training Course

By ROBERT L. COOPER / Photos by ROBERT L. COOPER / From the "Galveston Daily News" / Galveston, Texas



The Children's Library at Mont Sainte-Suzanne [La Bibliothèque des Enfants à Mont Sainte-Suzanne] by Pauline de la Motte du Loup

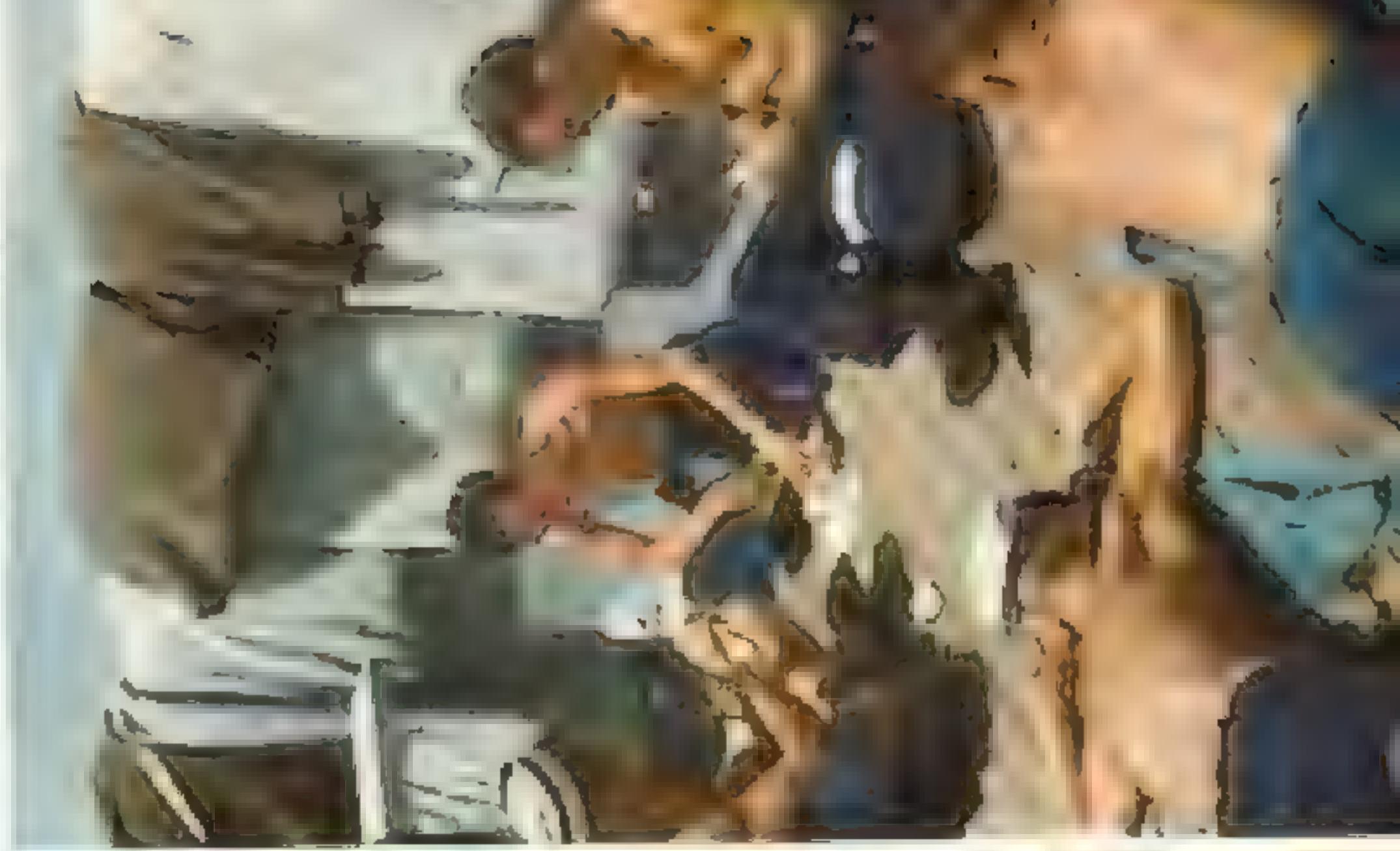
On the Tipperary Banks
At Adelphi, Dublin, 1841
John Hayes, Printer.





the first time, and the author's name is given in the title of the book.

W. H. Davis, Var. *leptophylla*. - The smaller species of *C. ciliolata* which I have taken have been described by Dr. A. Nels. as *C. ciliolata*, var. *leptophylla*, and Dr. C. L. Hitchcock has described it as *C. ciliolata*, var. *leptophylla*.



With the Russians' like fire, "Now when I run and fly All Water fleas" Hunderd Years back the Man who with Nature set



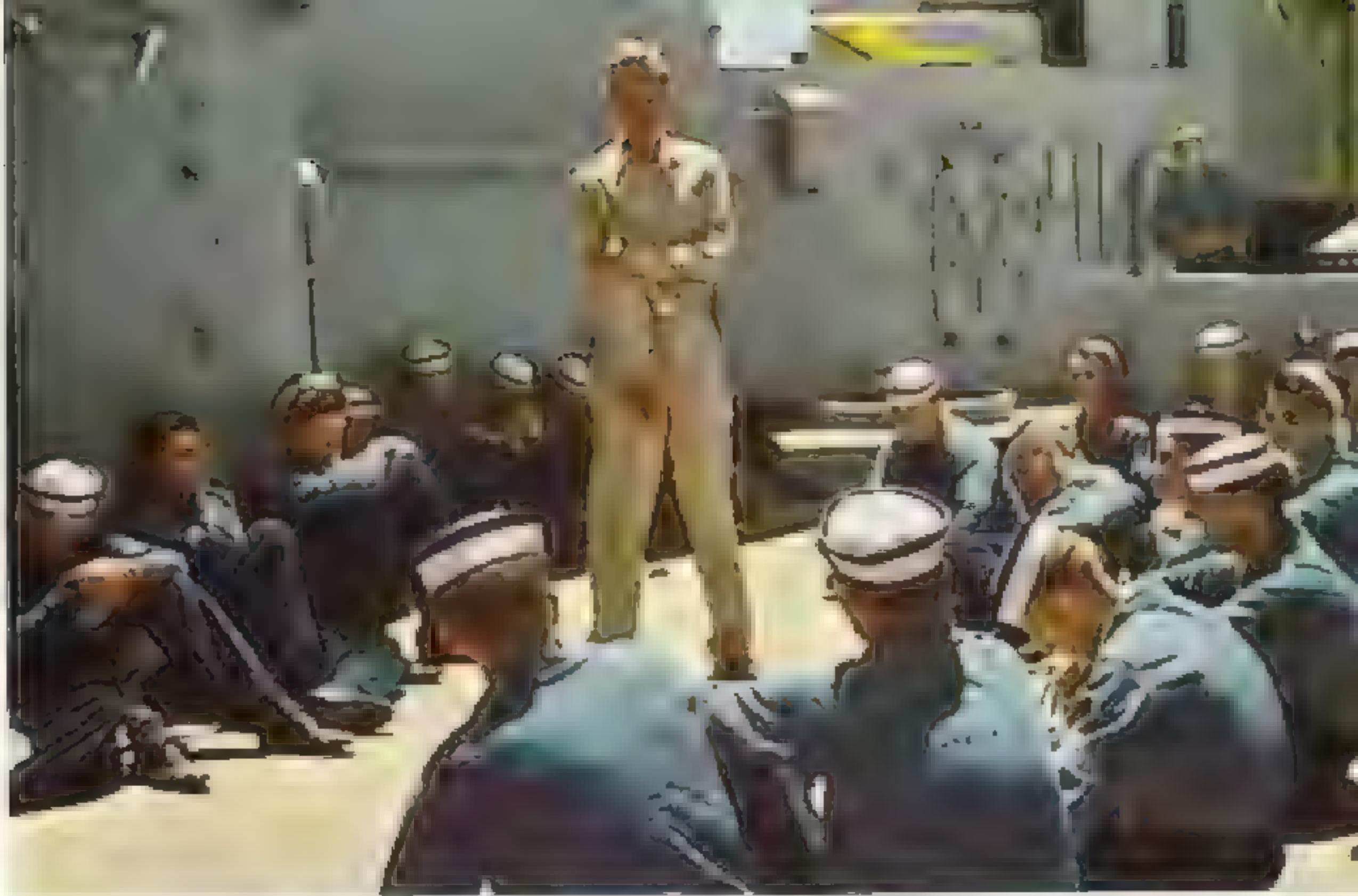


Finding the [hidden]. Please all dress in somberness I carry the Name Rose but These bushes are never finished



From the Sky, an Officer Drops In on New Jersey for a Task Force Conference

In this scene a helicopter comes in to land at the new New Jersey headquarters of the U.S. Task Force. It is a modern, multi-story building with a distinctive tower. The officer is seen jumping from the rear of the helicopter towards the building.



Summer Classes Move Upside Down: Youngsters Get a Lecture in Seaweedship

The students of a D.C. school learn about the ocean's life in a tank

By John F. Burns

Reserve and Academy May Team Up to Fix Their Sons' Position by the Son

By John F. Burns
Times Staff Writer
The Washington Post



William J. Walker, Warden of Ontario Penitentiary, and Robert M. Hayes, Warden of Ontario Penitentiary, have been appointed to the Senate of Canada.

—

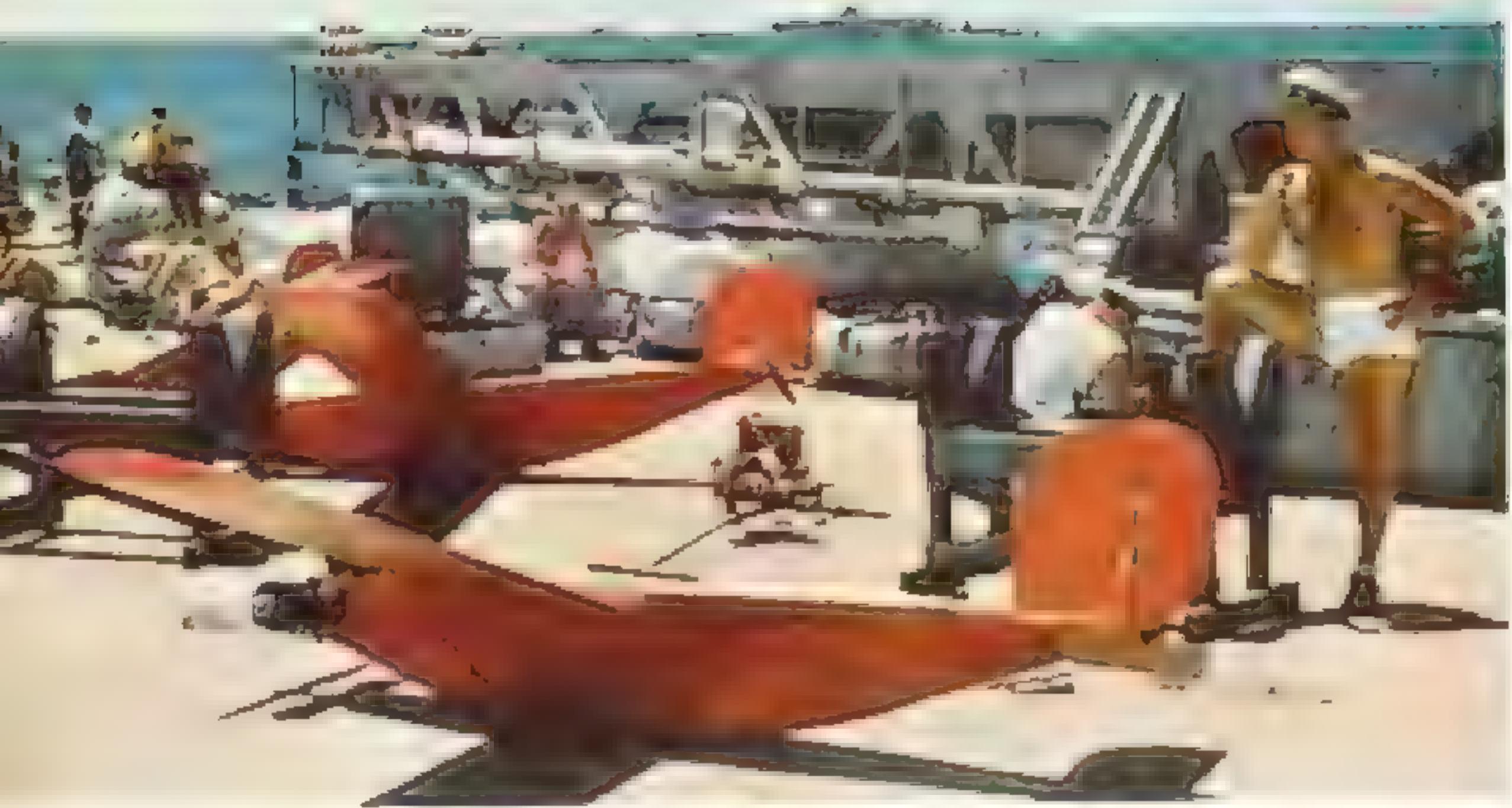
UNIVERSITY LIBRARIES FOUNDATION VINTAGE WINE STILL



Now Jerry's French Chops, Sausages, Meats, Fish, Vegetables, Nuts, Honey, and More in a "Family Market" featuring Fresh Local Produce, Organic Produce, and Natural Meats.







NO. 10. JAP PLANES, STEERED BY RADAR, GIVE WORKERS PRACTICE IN ANTI-AIRCRAFT GUNNERY

Left: Anti-aircraft gunners practice their aim at a target plane. Right: Gunners on a British gun boat practice their aim at a target plane.

Anti-aircraft gunners practice their aim at a target plane. Left: Gunners on a British gun boat practice their aim at a target plane.





Middle Week I p. 1 Richard Tait - Te Conditions Impress Your Girl Friends



And Israel's Sons Are Mined; the Heats of Tightness Men Are Roared in Prayer

—*“The Sabbath”*—



Son and I - The Highlands! A Boatload of Sheep passeon Approaches the Forth Bridge

From the moment we first set foot on the land, I have had a desire to make a trip to the Highlands. I had been in Edinburgh several times but never made the time.

Yankees and Scrubs Playing Visiting Games at the Grounds of the Mutual Association, New Haven, Conn., June 19, 1871.



1000 Miles, 1000 Miles, & 1000 Miles Section 1 Act 2
Finally Show That You're on the Side of Justice



Wander round several roads but on the Forest side branch out into Prince Alfred's road.

11

Additional Sections [Part of the Complete Standard Treatment View for a Larynx or Voice] (Continued from page 19)





Lads and Lasses Practise a Highland Dance on the New in King's Park, Edinburgh.
The building in the background is King's Park, Edinburgh, a former residence of the Duke of Edinburgh.



Primer: What is the See-thruxx and Rock'n'Rollin' Texas x Empire Lesser
Lambeth, 1998. (Left) The author's father, John, in the foreground, with his
brother, Jim, and other members of the 1st New York Artillery, 1776.



Midshipmen Love Photography. At Times the Cruise Resembled a Camera Club on Account

The young men of the class had little time to do other than study, but they found time to take the cameras along. A number of the pictures of just scenes of their cruise are shown.



XXX. Scotland and America Cement a Friendship Beneath an Umbrella Bud. Mr. Doe
Presents to Mr. Scott a Tulip to be Planted at the Home of the First American Ambassador to
Great Britain.

A Tulip to Bear Their Names Is Presented in the Soil and Drains in the
Villa of Mr. Scott, the First American Ambassador to Great Britain, by Mr. Doe, the
First American Ambassador to Great Britain.





United Kind Kingdom
The University Union
of Royal Holloway

1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	20100
1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	20100
1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	20100
1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	20100
1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074																										

W.H. Hiltz, W.H. White, W.K. Williams, K. Stoeckeler, & P. Lefebvre: *Microbial Flora of the Root System of *Populus tremuloides* in the Lower Colorado River Valley*





U.S.S. *Revere*, Commissioned in 1944, Moors Close to H.M.S. *Victory*, Launched in 1765

Painted by J. W. Johnson, 1944. The original painting is in the collection of the U.S. Naval Historical Foundation.



On the Quarter-deck Lord Nelson Fell Mortally Wounded at the Battle of Trafalgar
Painted by J. M. W. Turner, R.A., from Notes on the Naval Campaign and Battle of Trafalgar



A large church in Wroclaw - Wroclaw's famous church on the bank of Western Lubianka

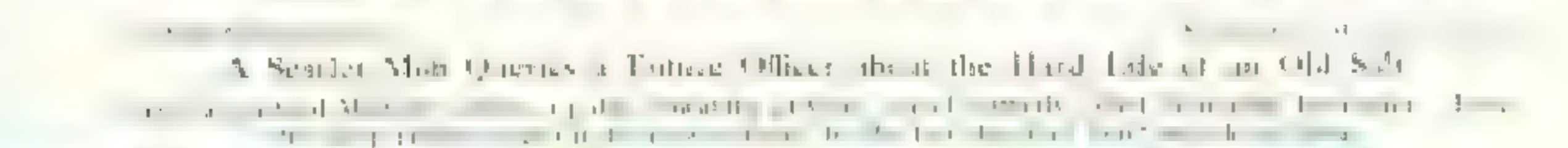
Wroclaw is a city in Poland, located in the Silesia region. It is the capital of the Lower Silesian Voivodeship.

III **THEATRICAL STYLING AND STANDS ON THE STAGE OF NINETEEN-THIRTY-EIGHT**
IN THE CHINESE DRAMA IN THE 1930'S





XXXII A "Beetle-er" Guides an Amputee Company Through the Tower of London
A man in a top hat and a patterned coat, identified as a "Beetle-er", leads a group of amputees through the Tower of London.



A Sailor Man Queries a Tuning Officer about the Hard Life at an Old Salt



Sea Bird Cities Off Audubon's Labrador

By ARTHUR A. ALLEN

Professor of Ornithology, Cornell University

With Illustrations from Photographs by the Author

FROM vast reaches of the sea, bizarre forms of life seem to breed in islands in the Gulf of St. Lawrence south of the lonely Labrador Peninsula, which John James Audubon more than a century ago called "wonderfully grand, wild—aye, and terrific."

These adjectives still apply, as we discovered on a trip for the National Geographic Society to photograph in color the sea birds the great naturalist painstakingly drew and painted. Often he worked 17 hours a day to draw details of color and form that cameras now catch in split seconds.*

All traffic to the north shore of the Gulf is by boat in summer and dog sledge in winter, or by plane, since no roads reach into this wild region. Though actually a part of Quebec, it is still often called Labrador as it was in Audubon's day (map, page 759).

Kittiwake Homes on Sheer Cliffs

Leaving our station wagon at Rimouski, Quebec, on the broad estuary of the St. Lawrence River, Mrs. Allen and I boarded the steamship *Matane I* and arrived next morning at Seven Islands (Sept. 11), on this coast of storms. There we were met by Game Warden Ben Bijou, who had instructions from Ottawa to take us to the bird sanctuary on Carrousel Island near by. Like everyone else on the coast, he went out of his way to be helpful.

It was June and a new generation of birds was just emerging. On two of the vertical cliffs facing the sea we found 500 nesting kittiwake gulls.

Kittiwakes derive their name from their three-syllable call. About the fishing banks they are among the most familiar birds, especially in winter. Then they often assemble in thousands and are known as "winter birds." They never venture inland, however, and are rare even about the harbors, where they are called "offshore gulls."

Unlike most other species of gulls, the kittiwakes always select narrow shelves on sheer cliffs for their homes and build substantial nests of seaweed which will not blow off in the storms that so often batter the rocks below.

Landing at the foot of the cliff in the lighthouse keeper's boat, we flogged up a blind on a ledge about 20 feet from the nests.

Luckily, the birds paid little attention to the blind. Soon after the boat disappeared, they

came back, and I was able to observe them at close range. Their dark eyes gave them a much gentler expression than the pale-yellow eyes of other gulls on this coast, and their small black feet were likewise distinctive.

Day-old youngsters, visible in some of the nests, were covered with dusky pale-gray down without the dark spots that are so conspicuous on most young gulls.

My contemplation of the home life of these interesting visitors from the high seas was suddenly interrupted by a gust of wind that caused the blind to career. In my efforts to hold it in place, I felt one foot slip from the ledge and had a momentary vision of camera, blind, and photographer plunging into the sea thirty feet below.

It proved fortunate that we made photographs the first day, because thereafter we had high winds or fog which would have made the approach to the cliffs most dangerous.

On Carrousel Island there was also a colony of some 1,100 herring gulls. A few great black-backed gulls, or "sad backs," and a couple of hooded razor-billed auklets and black guillemots were incubating their eggs in the numerous fissures in the rocks. About 150 eider ducks were breeding on the island, and more than 300 double-crested cormorants could be seen nesting in the tops of the dead spruces on the highest part of the island.

Miss the Boat and You Wait a Week

From this lonely rock of whirling wings and raucous, haunting cries, we returned to Seven Islands to catch the steamship *Sable Isle*, scheduled to dock the next morning at 6 on its way to Harrington Harbour.

* Dr. Allen, a pioneer in color photography of birds, is making a comprehensive series of color plates of the principal species in various sections of North America on a grant of funds from the National Geographic Society. One hundred and nineteen of his monochrome color photographs of birds have appeared in previous issues of the *NATIONAL GEOGRAPHIC MAGAZINE* as illustrations for the following articles: "Birds of Timberline and Tundra," September, 1941; "Sights and Sounds of the Winged World," June, 1945; "Trailing for Birds with Microphone and Color Camera," June, 1944; "Birds on the Home Front," July, 1943; "Ambassador of Good Will," June, 1942, and "Snapping Birds with a Color Camera," June, 1939, all by Arthur A. Allen. Dr. Allen's contributions to the *NATIONAL GEOGRAPHIC MAGAZINE* also include "Hunting with a Microphone the Voices of Singing Birds," June, 1931.

Because of the wind we saw few birds in the spruce woods behind the village. But ruby-crowned kinglets, fox sparrows, redstarts, and yellow-bellied flycatchers were not uncommon; and along a sandy ridge covered with spruce and scattered jack pines we found a pair of yellow palm warblers, as Dr. Garrison F. Lewis had promised us we should.

It was Dr. Lewis who first introduced me to this coast in 1928. Then Chief Federal Migratory Bird Officer for Ontario and Quebec, he had explored the north coast for sites for sea bird sanctuaries in 1925, as provided for by the treaty of 1916 between Canada and the United States for protection of migratory birds. His successor, Dr. Oliver H. Hewitt, was awaiting us at Harrington Harbour.

Not at 6 but at 4 in the morning, Mr. Billard rushed to the inn with the news that the *Sable Isle* had already docked and probably would stay only 15 minutes. We were dressed and had moved our 12 pieces of luggage to the pier in 14 minutes and 55 seconds.

This was our first taste of the advertised "vagabond cruises" along the north shore. Because of whims of wind, fog, and tide, no definite schedule of arrival and departure can be maintained, and the passenger who isn't ready will wait a week for the next boat.

Once aboard, if he is lucky he gets a cabin, but if there are many passengers—and there often are—he may have to be content with the dining saloon upholsters.

Decks are crowded with oil drums which, though empty, permeate the air with the odor of seal or cod. At his destination the "vagabond" is as likely to be cast ashore in the middle of the night as at noon, and he may walk down a gangplank in a dignified manner or climb down a ladder into a bobbing dory.

After braving the chill blasts that whipped off the icebergs to the east, we found a warmish spot in the lee of the pilothouse where friendly flames from the kitchen purred out of a ventilator.

Montagnais Indians Crowd the Wharves

Most of our fellow passengers were fishermen and small businessmen traveling from town to town. But some were sportsmen heading for clubs on the Moisie, the Gaspé, or other famous salmon streams, and still dreaming about the big ones that got away last year.

Others were young men taking summer jobs with construction companies. A few were girls returning from school or employment in Quebec and Montreal and looking forward to the simple pleasures of their rugged homes.

On the boat was an interesting admixture of

Anglican ministers and Catholic priests. Their flocks included many Montagnais Indians, who crowded about the wharves to shake the clergymen's hand and hear his words of encouragement—the men white-jacketed and gaunt, the women bulky and ungraceful in their voluminous multicolored petticoats and tight blouses.

Invariably the Indian women dressed their black hair as of old, rolled into buns over their ears. Above this coiffure they perched their time-honored but unbecoming liberty-bell hats, broadly striped with red and blue.

Despite their uncomfortable costumes, their buckskins and swinging hips, the women are remarkably hardy. Women and children travel with the men up the rocky streams for hundreds of miles in late summer to trap all winter in the interior.

They all come out in the spring to trade their furs at the Hudson's Bay posts for the next year's provisions, but during the summer they loiter about the posts, do a little fishing, repair their canoes, and rest up for the next trek into the interior.

Cold Breath of the Labrador Current

To the eastbound traveler along the coast, the effect of a branch of the cold Labrador Current, which flows through the Strait of Belle Isle, becomes more and more apparent. Trees become stunted and disappear; rocks with a deep covering of reindeer moss, sumac, berry, and other creeping or sprawling vegetation take their place.

The shore for hundreds of miles is broken up into innumerable islands surrounded by waters studded with rocks and reefs which plague the mariner.

Trees, sometimes of fair size, grow along the sheltered stream valleys on the mainland, but elsewhere, for every acre of trees, there are a thousand acres of moss stretching far inland until the effect of the Labrador Current is finally lost.

The interior is heavily forested, but adjacent to the cold water Arctic conditions prevail; deep snowdrifts lurk behind the sheltering cliffs, and icebergs float with the current in mid-July.

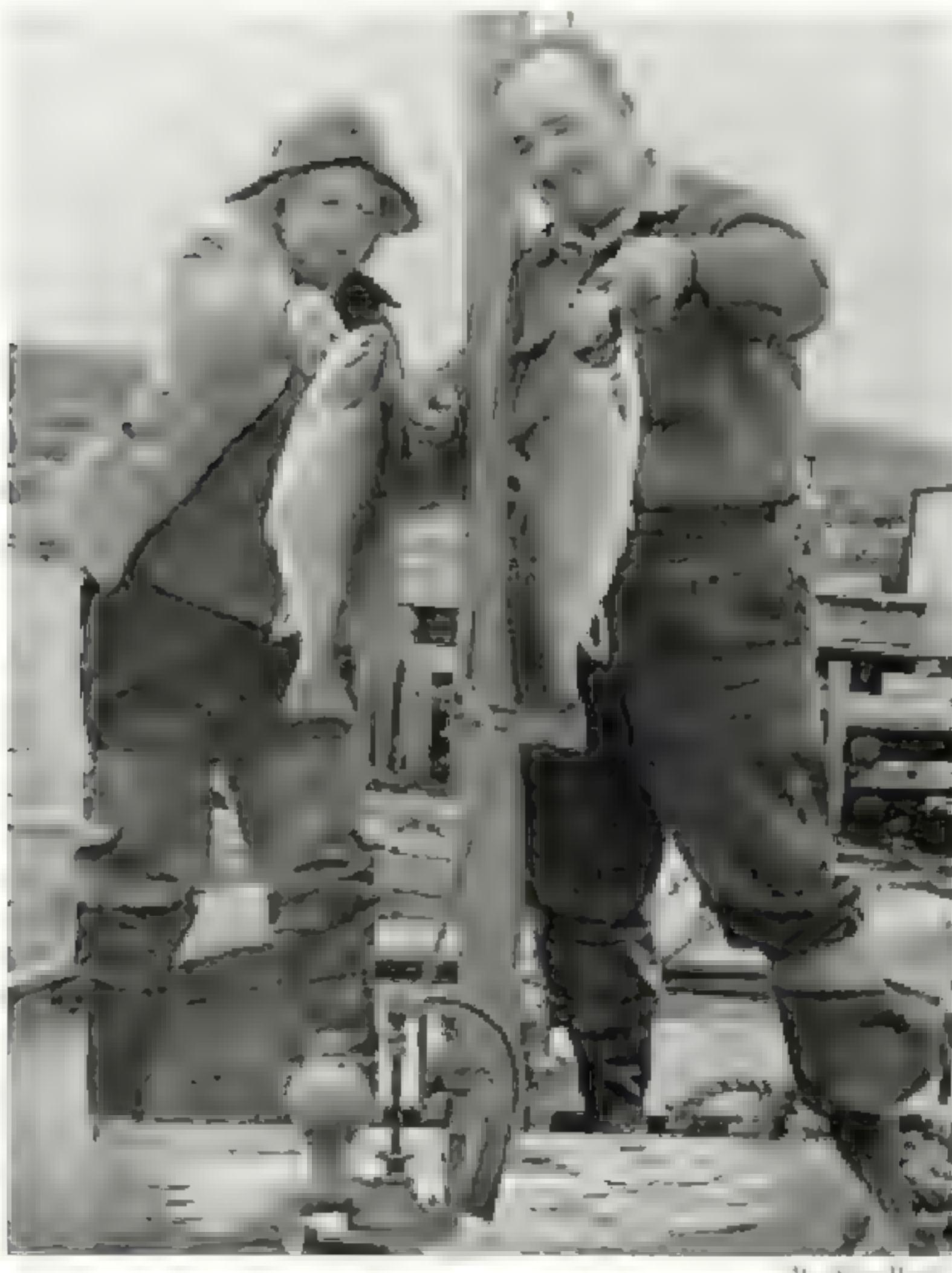
We reached Harrington Harbour in two days. There we were met by Dr. Hewitt and his boatman, Samuel Robertson V., in the paddled boat *Alea of Ottawa*, 38-foot cruiser built on the coast.

The Robertsons have lived at La Tabatière since before Audubon's time. Audubon tells of meeting with Samuel Robertson I at the same spot in 1843. So little has been the change of blood in the population of this coast



As if a Teacher Mattress Had Burst, Gannets Cover Bonaventure Cliff with White

Downy and Feathery Puffballs. A Colony of 100,000 Birds, the Largest in the World, Is Said to Be Found on Bonaventure. This Island, Located in the Gulf of St. Lawrence, Is One of the Most Impressive of Many Picturesque Islands in the Great Park of All Mammals.



"Comparisons Are Odious," Says the Author's Wife

For the first time Alia Akh invited her husband to travel to Arctic Bay, the St. Lawrence River. Then he landed his boat and never came back. On the next day he had left it in safety at the harbor, but his paddle snapped and he took to the ice floes, swimming ashore.

Alia's son, Léon, an arctic bird expert, is nearly as good a swimmer. He has himself swum as far as 10 miles across lakes and reefs from Hermonia Island. So does his wife, his own daughter, for at the age of 11 he had started carrying the mail with his father by boat in summer and by dog team in winter.

Seeking Birds in Wind and Fog

It was now June 25, and for the past five days the four of us were to be snugly on the boat with all of our baggage and equipment—more really snugly for the last two weeks when we had 196 more passengers. Fortunately, no one suffered from claustrophobia, although our

heads became almost callous from bumping the cabin roof, and we suffered miscellaneous bruises when the sea got rough.

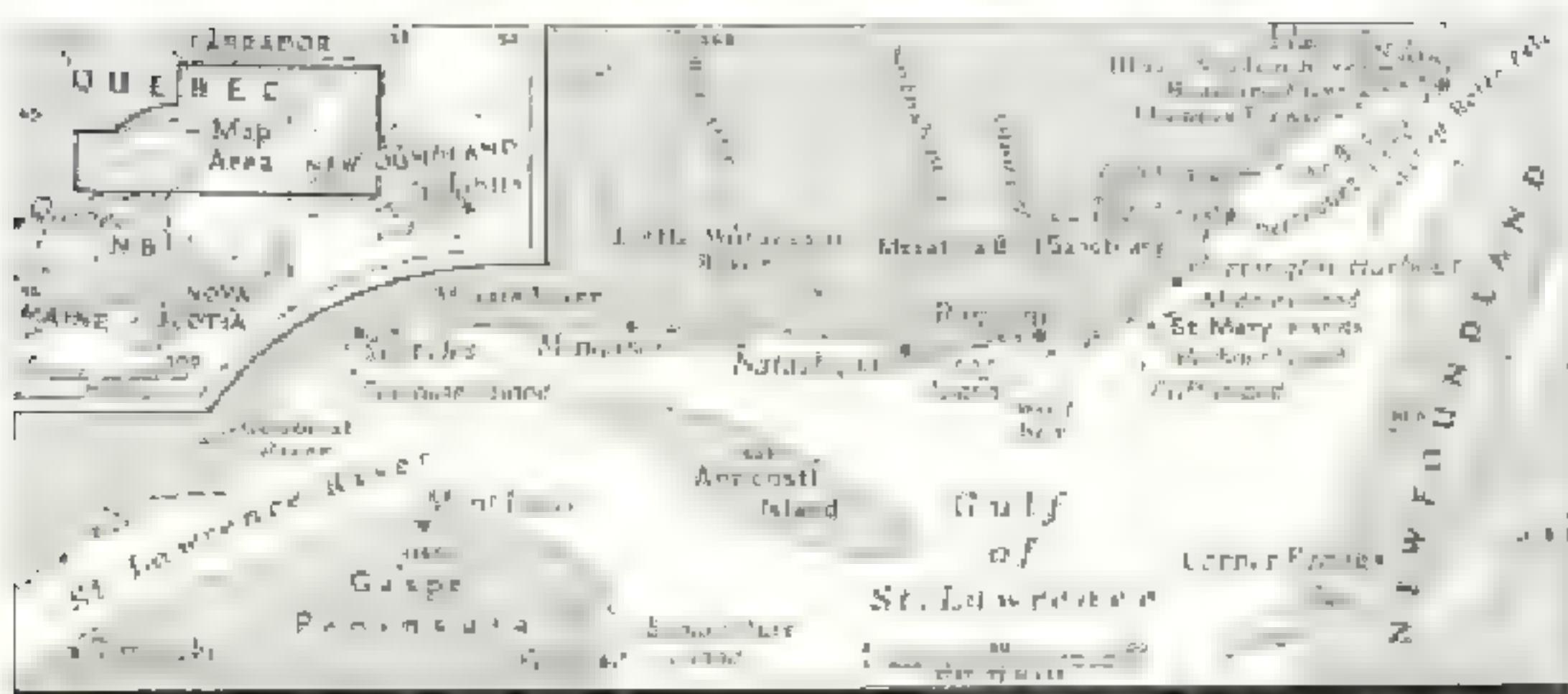
Our first official inspection was that of the St. Mary Islands Sanctuary, about 1½ miles from Harman Bay in the open gulf. It is wind and fog here all day, and when we left Fred Comeau, the telephone keeper and captain of the schooner that took us there,

We had good weather the day of our arrival, but during the following week fog, rain, and high wind were almost continuous. At times we could scarcely see the shore in front, running in the narrow, well-protected harbor, and again we could see waves crashing and into the air as they hit the rocky banks.

Working fast to seize the few hours of sunshine, we explored most of the sanctuary. We saw the arctic foxes and raccoons of the community, and red foxes and marmots of the island, there I found large colonies of rock ptarmigan, ptarmigan, and puffins of Mille Island,

Some species like the ravens and crows nest here in colonies, in large groups of nests which they have occupied since the time records began. Others like the eiders and black guillemots are more widely, and although they are often seen in flocks, they are in isolated pairs.

The guillemots, which fly low over water to the rocks, the eiders taking up spots on the tundra. Never before during our year had I heard so many birds as at the small freshwater lake, and while more than one pair of great black eiders built nests in a colony of



Thousands of Sea Birds Call Quebec's Rock Island, The Rugged Shrine "Home"
From Rimouski to Mingan Shallow (the author took a summer's leisurely voyage. On the jagged cliffs of island sanctuaries he and his companions counted 90,000 nesting birds (page 775).

herring gulls or on a rocky headland. In all, there were 16,000 to 17,000 birds nesting in this sanctuary.

Year after year the murres, returning from the open sea, show up on their nesting ledges on the same date, and each bird apparently occupies exactly the same spot it used the previous year.

Murre Returns Yearly to Same Spot

For ten years now, a single Brünnich's murre has claimed foothold on a narrow shelf of Cliff Island facing the sea. Here he stands in the middle of a flock of common murres—the tenth bird from the right and the fifteenth from the left. Stotus may rage, but nothing deters him from this particular spot. Of course he leaves it to go fishing, but he returns soon to the same few square inches.

Ten years ago Mr. Robert Johnson, at that time a graduate student at Cornell, banded a black guillemot that was incubating its two eggs in a deep crevice near the moraine in the harbor. When we inspected the crack this year to the bird was there again, for we could see a thin, very worn band on its little red leg.

We had an interesting talk on Cliff Island with the European, or "common" cormorants. These are not common in the usual sense, since there are only three or four colonies of them on this continent. The really common cormorant of North America is the smaller, double-crested species, which occurs in one or another of its nests from the Arctic to the Tropics and from the Atlantic to the Pacific.

The larger bird, with white bordering its pouch and with a blue-black neck and breast,

was originally called the common cormorant because it was found also in Europe and Asia. Some of these common cormorants were still incubating eggs, but the majority had black, weakly young, a few nearly as large as their parents.

After I was safely hidden in a blind and my accomplices had disappeared over the ridge, the old bird returned to their nests all about me. Youngsters were clamoring for food but no mauls were served during the next half hour. I began to fear that I might miss the amazing spectacle, for the fog, which already concealed the sea below me, began to rise and obscure the birds.

Cormorant Cafeteria

At last, however, one little brood that had been stretching up their necks with quivering pouches began to get results. What a party it was, as both father and mother opened the bladdered mouths and let the children dive down their throats for dinner (page 760).

During this grotesque performance the herring gulls hovered low overhead or darted into the melee whenever one of the youngsters brought out a fish too large for it to swallow.

Marooned in the ashes of the cormorants I tarried till we had to start back to Harbour Island in fog so dense that we had to depend on the compass for general direction and trust to luck to avoid two dangerous shoals. Our boathful host became alarmed about us, however, and we had covered scarcely a mile before the chugging of Fred's motor told us he was on his way to guide us among the dangerous rocks. By the time we were back in our harbor, it was dark.



Young Cormorants Ram Their Heads Far Down Their Parents' Throats for Food

In the upper air above the ocean horizon, the young cormorants do play. They ram their heads down their parents' throats, and the birds, too, seem to enjoy it. This is a natural way of getting food, for the young birds have no mouths, and they must swallow their food whole.

For many years I had wanted a newly hatched fledgling from a dark-faced gull or gull-like bird to give it to me to keep for my collection. But inland there was no one who had been able to obtain such a specimen. So I began to keep it written in my notebook whenever I saw a new bird, and I was often disappointed. Then, all of a sudden, I saw a baby bird.

Buster Mother as a Baby Loon

I took out my tape that would fit over my mouth and large enough to give me something to hold over my mouth and mouth to associate her best. The next morning the baby bird was alive and was ready to eat. Our next problem was to get him to the Harbor Island loons.

By some strange quirk of my psychology, the very first thing I thought of was to get them to the sea water. We made a

hole in the bottom of a tin can and put it around the bird's mouth.

Surprisingly, nothing happened. But after about two hours the bird began to eat, and they continued to return to it from their swim in the sand whenever we could stop them. I am beginning to think that they have not been fed with animal flesh for a week. But we noted all the recent events of this area, and I soon decided that the "coughing" was probably caused.

Returning to Harbor Island after a three-week absence the Gosses Mission and his jetty, the western end of a chain of institutions along the coast between Wilfred Goss and the old fort at Pointe-aux-Petits-Grés. He told us that the government had given a colony of penguins to the Gosses Islands, and that the entire bay was used as a time of great feasts by the penguins.

More recently the missions have invited teachers to help in developing new home industries, thus adding to the meager income of the families. Now many of the people devote the long winters to wood carving and making hooked rugs, for which the mission finds a ready market. Most of the doctors and teachers volunteer their services, and many a college student has passed a soul-satisfying summer at one of the Grenfell Missions.

La Tabatière, Six-family Town

Our next stop was planned for the mainland at the six-family community of La Tabatière, home of the Robertsons, in an area of stunted Hudsonian forest surrounded by Arctic tundra. Theoretically, such a sheltered area with its innumerable "edges" of woods should have supported an abundance of wildlife, but actually birds were scarce.

Fox sparrows and white-crowned sparrows were the most numerous; Lincoln's sparrows and gray-breasted juncos could be seen occasionally; Wilson's and black-poll warblers were not uncommon, and there were scattered Tennessee warblers, mourning warblers, and yellow-bellied flycatchers, which we know as transient visitors to the States in their passage to and from their winter homes in South and Central America.

There were, of course, some robins and juncos, a few red-breasted nuthatches, winter wrens, ruby-crowned kinglets, white-throated sparrows, and yellow warblers, so common much farther south, and a few flocks of crossbills and pine siskins, already finished nesting. The birds were so scattered, however, and tangled spruces made observation so difficult that we were lucky if we found one or two nests in a morning's hunt.

Although offered rewards, the few children living about the harbor could give us little help. Their eyes evidently were trained for the sea, and the only land birds they know at all were the dooryard "stripies" (white-crowned sparrows), "brown bottlers" (fox sparrows), and "brown diggers" (gray-cheeked thrushes). We had to content ourselves with studies of the fox sparrow, gray-cheeked thrush, and Wilson's warbler.

Before leaving La Tabatière we enjoyed a fine dinner at the comfortable home of caribouman's parents, Mr. and Mrs. Sam Robertson IV. Although isolated from centers of culture and industry, they keep in touch with the world of affairs by radio, and the mail-order houses enable them and their scattered neighbors to enjoy many modern conveniences.

The small boat, piloted by Sam's brother, arrived while we were there, piled high with

bags of parcel post, but with only half a bag of first-class mail for the whole coast from Herrington to Blanc Sablon.

From La Tabatière a few hours' run took us to Gull Island in St. Augustin Sanctuary and a fine colony of ring-billed gulls, and great black-backed gulls, as well as eider ducks. A little flock of green-winged teal and a few black ducks were frequenting one of the ponds; also a couple of least sandpipers and a greater yellowlegs. But none of these were big.

I was surprised to find eider ducks nesting within 15 feet of black-backed gulls' nests, since the birds apparently are natural enemies (Plates VII and VIII). The gulls never miss an opportunity to steal an egg or carry off a young eider. Indeed, the saddleback is the most unpopular bird on the coast because of these depredations.

Even among the fishermen, who, furtherly at least, were accustomed to taking the eiders' eggs for their own use, the sight of a saddleback doing the same thing arouses anger; when they see one pounce on a young eider they become quite vindictive. Often it is their own approach that gives the gull his opportunity, for the boat frightens the mother away and leaves the ducklings unprotected.

The great black-backed gulls have learned to watch for just such eventualities, and many times we ourselves, after passing a family of eiders and scaring away the mother, looked back to see a pair of blackbacks carrying the little flock. If the mother did not promptly return, the youngsters would keep diving until exhausted and then were easy prey.

Eider Roofs a Black-backed Gull

I set up a blind one morning near a black-backed's nest and some ten feet from an eider's nest, and waited the arrival of either bird.

The eider came first, flying to a small pond about 100 feet from the nest and walking the rest of the way. Evidently she did not like the blind. She sat down on the rocks about 15 feet from her nest. Because of the location of the gull's nest on the end of a little ridge her enemy's natural approach was past this rock, unless he flew directly to his nest.

Finally the gull circled about, landed beyond the duck, and started to walk past the rock where the duck was contentedly resting.

Never have I seen greater fury than the bristling rage that greeted this gull when he started to enter the eider's territory. All his feathers stood on end, his bill opened, she made jabbing motions in his direction, and then she flew at him with such force that she bowled him over.

Picking himself up, the gull grabbed a small stick in his bill and advanced toward the elder; but once again she rustled her feathers and pointed her bill, bringing him to a dead stop. Wanting nothing more to do with such a vixen, he turned tail, walked away 25 feet, and nonchalantly sat down. There he sat for an hour.

I was of mind to threatened with a stalemate at last, however, the gull took wing, circled about, and dropped beside his eggs in an evidently unaccustomed position. He kept twisting and turning, but could not decide how to approach the eggs from that side.

What was the final outcome of the placing of the two nests in such close proximity I never learned, but I left with a feeling that, when man does not interfere, the elders can take care of the saddlebacks all right. Undoubtedly they were doing so long before Leif the Lucky sailed the Labrador coast while searching for Vinland.

The Basin a Kettle of Fish

From Gull Island we continued our cruise in the *Ale* to Thomas Tickle, a beautiful steep-sided harbor which lay that night under a full moon. The next morning a rough run of three hours brought us to Bradore Bay. How that boat did roll! We were glad to get into the sheltered retreat of the Basin, even though it was the rendezvous of fishermen having a successful season with their cod traps.

One of the schooners, we were told, had taken 100 quintals of fish from its net one morning and found it equally loaded at night. A quintal is 112 pounds of salted, sun-dried codfish; it represents about 50 six-pound fish.

In other words, the fishermen took approximately 10,000 six-pound fish from their net in one day. That was, of course, unusual, but catches of 3,000 fish were frequent during our stay.

Stay we did for five days, because when the wind was not whipping up the sea, the fog was so thick that it would have been madness to venture forth. There was nothing we could do but read or write, but the fishermen had a full-time job and went right on cleaning their catch into the hold.

The Basin is very shallow and the water is clear. For acres about us the bottom was white with the heads and viscera that poured overboard in an endless stream from the three schooners anchored near by. The livers were collected in hogheads to make vitamins for pale people, and the fish themselves were split, salted, and stored away in the holds, to be dried later at Herrington or in Newfoundland at the home ports of the fishermen.

About the Basin are a couple of "summer homes" with their stages and fish shacks, but most of the fishermen come here from elsewhere, as they or their ancestors have been doing since long before Audubon's day. The two fish shacks had bars nailed across their doors and white flags flying from their roofs, indicating that they were full.

Eba took one look at the bottom of the harbor and two whiffs of the air before she again sought refuge in the *Ale's* cabin.

But the Bradore Bay area had its pleasant side also. For though the weather prevented moving the *Ale*, we could go ashore in the dinghy and tramp the island in which the Basin is located, or row the mile to the mainland, when it was not too rough, steering by compass when we could not see through the fog.

We found a little trout stream with a couple of youngsters fishing. My first cast hooked a richly colored 10-inch speckled trout; and the boys, who were using improvised lines and bits of bacon for bait, yelled out, "That's a good luck you've got, Mister!"

It didn't take long to fill the creel with small trout up to 15 inches in length, and we felt a bit set up, thinking back on the puny 7- and 8-inch ones at home. We did not know what was in store for us at our next stop at Blanc Sablon, where we were again marooned for three days.

The Blanc Sablon River is a much larger stream, stemming from a fair-sized lake a few miles inland and meandering down through the scrubby spruces and muskeg over a sandy bottom to the sea. The tide is not strong at this point, but it did not look like a trout stream to me. Nevertheless, we were shown a pool near the village, where it was said the fishing was good at the change of the tide.

Sure enough, when the stream began to flow out with the tide and the water was littered with bits of seaweed, the trout began to rise—not 10- or 12-inch fish but 2- and 3-pounders. Eba hooked a 4-pounder and by careful maneuvering slid it up on the sandy beach without a landing net. For two hours she landed it over me. Then I hooked one that weighed four and three-quarter pounds on the Hudson's Bay Company scales, and my ego returned (page 708).

Fish Too Big—Quits Fishing!

The next day the storm continued, and Ollie Hewitt and I explored the river as far as the lake. On the way back we discovered a small pool, at the foot of the first rapids, in which lay a half dozen of the largest fish I had ever seen in a trout stream. They were probably salmon, but I shall never know, because my



Whether to Sit and Warm the Eggs or Stand and Face the Camera. That is the Question

In White Stone and Black Jacks, the Vulture Vines Wear Printed Dress in Their Rock Nurseries

By WALTER COOKE
Photographs by G. M. HARRIS

Continued from page 100





BEING A WING, Complex Nesting Behavior in the New Haven Skyscraper Cops

On the 14th floor of the skyscraper, just below the top of the building, there is a small, dark, rectangular opening in the wall. This opening is the entrance to a nest box, which is part of a complex nesting system. The nest box is made of wood and has a small entrance hole. The entrance hole is located on the side of the box, and it is surrounded by a small amount of debris. The box is situated in a dark, enclosed space, and it is surrounded by a small amount of debris. The box is situated in a dark, enclosed space, and it is surrounded by a small amount of debris.



Common Birch Bark Beetle Infestation Shows Large Areas of Bark Damaged by Larvae

Photo by: Michael S. Hovey, University of Massachusetts, Amherst



Like Marble Statues, Puffins Turn Their Heads to Gaze at the Sky

At the end of the day, the birds return to their nests in the same order they came in. The first to arrive are the males, who have been waiting all day for their turn to mate.



Ward's Expert Sourcing the Re-filmed Look Is Tack's Chancy Wadder

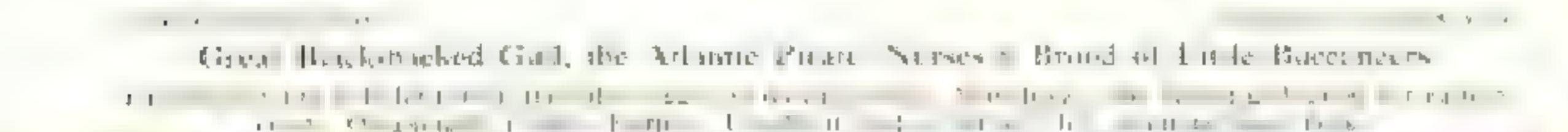
By [JULIA KELLY](#) | Photos by [JONATHAN MCKEE](#) | Styling by [KATIE HARRIS](#) | Hair and makeup by [JESSICA GRIFFITH](#) | Wardrobe stylist: [CAROLYN LEE](#) | Wardrobe: [DARLA'S DRESS](#) | Location: [THE STUDIO AT THE STATION](#), LOS ANGELES

Mimma Odeh Played the Priest to Lane's Unborn Children's Home with Oscar-Worthy Conviction. Now She's Back to Show Us How to Rock a Wig and a Whole New Look.





101 Wings Stretched, Head Waving Side to Side, a Gurnet (Left) Waves His Love
Song to the mate. Above him, a female Gurnet (Right) has just laid an egg in his nest.



Great Horned Owl, the Adeline Prince Nurses a Brood of Little Bucannans



tackle in my inexperienced hands was too light for them.

The first one took the same fly that had landed the big trout the day before. He started up the rapids some ten yards until I knew I had him well hooked.

What I should have done at this point I do not know, for the fish certainly had things his own way. With a rush he cleared the water—a yard long if he was an inch! My only heavy leader parted in the middle. For the first time in my life I quit fishing because the fish were too big!

The following day the weather cleared somewhat and we were able to see the northern tip of Newfoundland across the 20-mile Strait of Belle Isle. We headed back toward Perinet Island in Bradore Bay Sanctuary, easternmost of all the sanctuaries.

A cod net was anchored a couple of hundred yards offshore, and puffins in a large flock were having an amusing time balancing on the floats. We feared for their safety, but when we circled the net we could find only one bird that had become entangled.

A worse tragedy had befallen a half-dozen of the birds that had trekked into a seal hunter's shack from which most of the roof had blown off. Apparently the door had closed while they were inside, and they could not rise abruptly enough to fly through the open roof.

Ollie Hewitt estimated that 48,000 puffins were nesting on this island which for hundreds of years has been honeycombed with their burrows. But on the day of our visit most of the birds were away fishing or incubating in their burrows; no more than two or three thousand were in the water about the island.

Puffins Have Big and Little Poes

While waiting in a blind for the return of the puffins, I became unpleasantly aware of armies of ticks crawling around the rocks, apparently waiting for the same birds that I was waiting for. We became well acquainted, if not intimate, during the ensuing wait. I have often counted the culprits while waiting for a tardy friend, but this time I counted the ticks, and if someone had told me there were sixty ticks a minute, I could readily have believed it.

How the puffins have survived the attacks of these hordes of bloodsuckers through the ages, and, indeed, how the ticks can thrive in this Arctic climate, is difficult to understand.

Not are the ticks the puffins' only enemies. When Audubon visited Bras d'Or (as the bay was called in 1833), his son John collected a pair of gyrfalcons whose nest revealed remains of puffins. From my blind I watched a pet-

grave falcon strike down one of the puffins near its burrow, and before we left the island we found evidence of six other fresh kills.

The sanctuary is well protected now from "eggers," but the natural destruction of these charming, colorful little birds continues and keeps them from overpopulation.

Many razor-billed auks and common murres were nesting under the gigantic jumble of stone slabs that line the shore, while on top of the island were several pairs of horned larks and pipits. Elsa found a beautiful pipit's nest, with six brown eggs, built in a curious triangular cavity in the reindeer moss atop a small boulder.

As the weather again became threatening, we left this interesting island and headed back to St. Mary Islands. The numbers of gannets cruising back and forth seemed to have increased since we traveled eastward. We heard Hudsonian curlews passing overhead, already started southward on their fall migration.

Black Flies a Scourge at Mecatina

At Mecatina Bird Sanctuary the black flies were unbearable. In spite of our efficient deterrent, they attacked our eyelids and ears and crawled down our necks wherever we neglected to smear the fly dope. At St. Mary Islands, however, they were comparatively scarce.

Here two other passengers joined us: Ollie Hewitt's brother-in-law, Tom Barry, an ardent fisherman looking for a rest from his strenuous paper business in Madawaska, Maine; and Louis Le Mieux, a student at Laval University, Quebec, who had been left at St. Mary Islands to study the great hump-backed gull.

The following day Ollie and Tom went jigging for cod while Elsa and I photographed guillemots. Ollie explained to Tom that the harder he jerked the line, the larger the fish he would catch.

Tom gave the line a mighty tug and hooked one of the largest cod caught on that part of the coast—60 pounds, ten times the weight of the average cod.

With six on board we scarcely rattled around, even when the sea was rough. Two had to sleep on the tiny deck and pray it would not rain. Drying out sleeping bags was next to impossible.

Continuing our journey westward, we alternated bird islands with trout streams, putting in the good days in blinds with the birds and the lousy days with the fish.

Between Wolf Bay and Romaine is the Fog Island Sanctuary, low-lying rocks exposed to the storms of the open Gulf. Landing here is often dangerous or impossible. We were



On the Downstroke a Robin's Feathers Overlap and Grip the Air

On the upstroke, the high-speed camera shows, they open by (from the author's plate "B"). Three slender feathers are too young to have any color at this time. They do not recognize the binocularing patent until his feet have touched the nest, a bowl of mud, grasses, and small stalks just outside the author's whale-blubber lair. They'll sit up and take note no lie.

lucky in having a couple of fairly quiet hours so that we could visit a colony of murres and cormorants nesting in a much more accessible place than most, on broad, shrubby rocks where we could easily walk among them.

The young murres were now nearly one-third grown and about ready to go to sea. Although they nest in dense colonies (Plate II), the murres, like the aukls and the penguins, are rather solitary during the rest of the year. When the young are two or three weeks old, each family with its one chick goes off by itself to the open sea, where the youngsters finish growing up.

On an adjacent island was a fairly large colony of Caspian terns and ring-billed gulls (Plate I) with young now well feathered, wandering over the rocks, and even swimming out to sea.

The wind howled while we were there, so we had to put anchor and start for Romaine in a rough sea. Held up here for a day and a half by high winds, we explored the Olmane River, a beautiful salmon stream, and visited a campment of Montagnans Indians on high rocks overlooking the sea and village.

From Romaine to Natashquan is a dangerous part of the coast for small boats, with no



Arrow Points to the Mura or Purple Wigeon; the Wren Is Nined at Coping Tuggs

Clouds—
the speed flight, the mura and the purple wigeon, the redpolls, the red-breasted
waxwings, the red-throated loons, the arctic terns, the eiders, the pectoral sandpiper, and the Arctic
terns—these are the birds that have been noted by the author during his recent trip to the
northern Labrador coast.

After four days we crossed the strait
aboard our bushwood boat, however, and before dark slid into a beautiful little harbor
at the Little Washish River.

Expedition Counts 99,000 Birds

At Mingan, which we passed the next day,
we were cordially welcomed by Lt. Col. E. P.
Kern, of the U. S. A. Forces, who built and
operated the modern airport there. Mingan
was an important trading post on the trail
to the interior to Goose Bay Labrador, and
thence to Iceland.

Dr. Hewitt's inspection trip was now com-

pleted. We had visited all of the sanctuaries
along this coast and counted 99,000 birds using
them for rearing their young. The 16,000 birds
now be put to for the winter. Sam Robertson
would return to the Fabat ore and Olie Hewitt
to Grosse-Île, and I would circle the last
Peninsula before returning to Gaspé.

What a contrast to the scenes I saw
from Audubon's time! The country had
one of the most desolate scenes I ever
saw. In the few places where we could find
any hayfields, grasses, or trees, the fields
were covered an acre or more long and
of color, and the

Thrifty homes, neat villages, horses, cows, sheep, and all those things which we had not seen for over a month enchanted us after the wild north coast. We were bound for picturesque Petié and Bonaventure Island.

Lying two miles offshore, Bonaventure Island presents to the sea a series of ledges as its soft orange-red rock leaves off in huge blocks during winter (p. 757). These ledges, some time immemorial, have been the summer home of the strange and spectacular sea bird known as gannets. As large as some geese, they are snow-white in plumage, with black tips to their wings and an orange-buff wash to their heads (Plates III-VI and VIII).

Not shy, the gannets permitted close ap-

proach and proved to be the answer to a bird photographer's prayer. Their black-faced youngsters were still covered with long, fluffy white down which gave them the shapeless appearance of giant powder puffs with black handles.

Gannets spend the greater part of the year on the open sea, plunging like animated javelins from high in the air at the lackless mackerel or other fish that dares venture close to the surface. As they glided past us at the edge of the cliff, they turned their heads and surveyed us with a cold gray eye encircled by blue. They gave an impression of abstract power that is perfectly at home in storm or fog or whatever the wild sea has to offer.

A New Light Dawns on Bird Photography

THALL happened so quickly I could not see what occurred; yet here it is before me as clear as the printed page.

First I had heard the distant call of a female Cooper's hawk and seen the answering excitement of her youngsters six feet in front of the blind. A darting shadow, a flash, and the mother bird stood there glaring at me with fire in her eye. One foot grasped the branches of the synthetic nest we had built at the base of the tree; the other held a plucked bird.

But now came the fresh view that I had no idea of the action. I could not tell how far the hawk was from the ledge approached, or whether her talons were withdrawn or fully extended. I did not even notice that she had food in her bill. I might have supposed she carried it in her claws, for she certainly had it in her foot when her image finally fixed on my retina.

Speed Flash Reveals the Unseen

A little experience with the speed-flash camera had trained my fingers to press the shutter release at precisely the right instant, so that the resulting flash of 1/5000 of a second's duration occurred when the image of the bird was passing the middle of the film. And behold, here is the whole story as I should like to have described it, and as you can now see it for yourselves in natural color: the frozen action of a predatory hawk returning to her young with a plucked bird in her bill (Plate XIV).

Caught is the look of expectancy and hunger in the eye of one of the youngsters; one sees the strength in the pinions of the old bird,

and the powerful talons reaching out to grasp the nest. The colors are natural and true.

A few years ago we would have branded such a photograph a "nature fake," impossible for any camera to produce, but today it is fast becoming commonplace.

Dr. Harold E. Edgerton, of the Massachusetts Institute of Technology, first brought to the attention of eager naturalists and wildlife photographers the wonders of the new high-speed flash apparatus with his book *Flash!* and later with his marvelous hummingbird photographs in the NATIONAL GEOGRAPHIC MAGAZINE for August, 1947.

Dr. Donald R. Griffin showed the possibilities of Edgerton's apparatus in photographing bats for the July, 1946, NATIONAL GEOGRAPHIC, and Ernest P. Walker and Edwin L. Wisherd used a similar portable speed flash in making the phenomenal photographs of flying squirrels in the May, 1947, NATIONAL GEOGRAPHIC.

My Cooper's hawk project was one of several interesting experiences during the season of 1947 when I applied the new light to old problems in bird photography.

Steve Eaton, a graduate student at Cornell found the hawks' nest 65 feet up in a white ash tree in a dense wood lot about ten miles north of Ithaca, New York.

The tree was the tallest in this part of the woods, so there was no possibility of placing a blind in an adjacent tree.

When the eggs hatched the first of July, it occurred to me to test a new method of study which, if successful, would permit us to get a more or less complete record of what and how a Cooper's hawk feeds its young, and to



Papa Opens the Shutters of His Own Venetian Blind (Page 778)

On the wing's upstroke each flight feather turns on edge to minimize resistance of the air. A racing swimmer uses the same technique in "sculling" his way.

revel each rapid action by high-speed flash photography.

Accordingly, with the help of an expert climber, Paul Shepard, a student in the summer session, I built a dummy nest in a bushel basket and hung it beneath the real nest when the young were about five days old.

The hawks paid little attention to this innovation, so we transferred the young to the basket. A few hours later, the female flushed from the basket at our approach.

Next we built a blind on the ground, covering a framework with burlap. Then, during the next week, we lowered the basket ten feet a day until it was fastened to the trunk of the tree ten feet from the ground.

Perhaps the hawks were surprised at the rapid settling of the foundations of their home, but they continued to feed and brood their young with no apparent misgivings.

Later we successfully substituted for the basket a less conspicuous potato crate.

To complete our preparations, we rolled a stump against the base of the tree and built a dummy nest on top. Thus, when we were ready for our observations and photography, we had only to move the youngsters from the crate to this new bungalow in front of the blind.

Even when we added a 4-foot square, light blue backdrop behind the nest, the old birds continued to feed and the youngsters



Robin's Eye Winks—Not in Elation, but in Attentive Self-preservation

YESTERDAY morning the robins were the victims of the raptors' hunting. In the afternoon the hawk was the victim of the robins' hunting. The hawk, as well as the three young ones he had just captured, was shot dead.

He behaved in their characteristic domineering manner. We could see at close range the kinds of food the old birds brought; we learned (with patience) how long the youngsters had to wait between meals; and we were able to record with the speed flash the home life of those interesting predatory birds.

Two Birds a Day per Youngster

The youngsters apparently never suffered from hunger, because there always was unused food on the nest whenever we arrived. They grew normally, and the last of the three left home when it was 31 days old.

Observations were made on 11 days, during

which I spent 30 hours in the blind, Paul Shepard 19, and Anna Kessel 9, at various times between 6:30 in the morning and 7:30 in the evening.

During the 38 hours that they were under observation, the young hawks were fed 28 times on ten species of birds or small mammals, including one meadow lark, two chipmunks, eight robins, five house sparrows, two starlings, four flickers, two meadowlarks, two young red-eyed vireos, one young song sparrow, and part of one white leghorn pullet.

This was at the rate of a little more than two birds a day per youngster.

The old birds apparently were not alarmed



Father Robin in Blindfolds Shows His Open, Lifelike Eye of a Starling

The first series of pictures was a success. Other birds, however, were more difficult and required more time and care. In man the organ of sight is the most important, and Dolly had to be thoroughly familiar with the words to start the sat mouth working, otherwise the dinner might prove a failure.

By the time I had my first bird and departed from it, however, I had made the blindfold such as that of a chickadee or titmouse.

Altogether, the experiment proved successful and in the resulting pile of prints there can now view incidents in the home life of a hawk without the inconvenience it caused us and, incidentally, without the same degree of excitement or satisfaction.

"Tooth to Nail" with a Chickadee

We next turned our attention to a bird which is the antithesis of a Cooper's hawk—a friendly little chickadee with no allergies to people or to cameras.

"Don't close your eyes, Dolly," I admonished my daughter as we tried for photographs of the chickadee flying to her lips to take a worm from her teeth.

The first series of pictures we had taken were ruined by tightly closed eyes. Then neither of us had noticed, at the time, that no matter how interested Dolly was in her worm, a friendly little bird perch on her chin, she unconsciously closed her eyes when she saw it approaching her face.

The camera had caught all the emotion and anticipation on the face of the chickadee. Our Dolly had reacted in a most natural, but unphotographed manner.

So this time I constantly reminded Dilly to keep her eyes open. With enormous effort she carefully did so, giving added charm to the photograph of a truly wonderful experience—that of meeting a wild creature face to face for both the bird and the girl put on with a natural expression of confidence (Plate XI).

An ordinary robin provided a real test of the new speed flash for a study of wing and feather action in flight. The bird had very reluctantly accepted for its nest site a movable shelf we had fastened to the laboratory window casing.

When the young were well grown, we lowered the shelf to a convenient height from the floor, fastened a blue backdrop behind the nest so that the photographs would not appear as if made at midheight, and set the sealed-lead flash tubes at the right heights and angle inside the laboratory.

Color film is so slow that the lens iris diaphragm must be set at F 5.6, even with the lights two feet from the subject; so there is very little depth of focus. Indeed, one cannot get wings and body equally in focus except when the wings are held straight back (Plate XII).

Black-and-white film, however, provides sufficient speed to use a stop of F 2.2, and the resulting series of clear pictures of the wings in their different positions gives one a new notion of the flexibility of the feathers.

Wing a Wondrous Mechanism

There is the upstroke, for example, when not only is the wrist joint bent so that the wing as a whole offers the least resistance to the air, but the individual primaries and secondaries are all turned on edge, so that the wing opens up like a Venetian blind (page 775). One sees the robin's body right through the wing, and the wing is fitted with practically no air resistance.

In the downstroke, however, the flight feathers are beautifully imbricated, or overlapped, to give the greatest possible resistance to the air (page 772).

In photographs of the robin about to alight, we see the group of feathers borne on the thumb, and known as the alula, standing out at almost right angles to the wing. The tiny rudimentary first primary, which is found in all thrushes and for which no one has ever advanced any satisfactory explanation, likewise stands out from the rest of the wing (page 773 and Plate XII).

Can it be, as my colleague, Dr. Paul Kellogg, suggests, that these feathers, acting in conjunction, serve like the spoilers on the front edge of the wing of a plane to break up the smooth flow of the air and destroy its

lifting power? This would allow the bird to alight more accurately.

The number and relative lengths of the flight feathers in different individuals of the same species of birds are always the same, as are the actual lengths also, to within a few millimeters. Indeed, all the species in a bird family, such as the thrushes (*Turdidae*), which include the robin, show remarkably little variation.

In the robin photographs, for example, one sees a tiny first primary followed by four long primaries of about equal length, followed in turn by five gradually shortening primaries and six secondaries, giving the appearance of a more or less square-ended wing.

If one were to examine the wing of a wood thrush or a bluebird, or any one of the 304 species of birds found all over the world that make up the thrush family, he would find the same rudimentary primary, the same four long primaries, etc., making up the same shaped wing. There would be few exceptions.

On the other hand, if one examined any one of the 63 wrens that make up the family *Troglodytidae*, one would find, as in the photograph on page 788, a wing in which the primaries gradually lengthen from the first to the fifth and then shorten again as the body is approached, giving the appearance of a rounded wing.

Similarly, in all the swallow family, the *Hirundinidae* (page 790), the first primary is the longest, and the flight feathers shorten very abruptly toward the body, giving what is called a pointed wing.

The number of functional primaries (those borne on the modified hand) of an ordinary bird is always ten, except in a relatively few families of perching birds, where the number is nine. The number of secondaries (those borne on the forearm), however, varies considerably in different families of birds, from the six (plus two tertaries) of the thrushes to as many as 37 in the excessively long-winged albatrosses.

Indeed, length of the wing in birds is usually gained by increasing the length of the forearm with its secondaries, rather than increasing the number or relative lengths of the primary feathers.

Birds in Flight Identified by Wings

The different shapes of the wings of a number of small birds are shown in the accompanying photographs, and one familiar with birds in flight can often identify their silhouettes against the sky by characteristic wing action and resulting undulations in the course of flight.



A High-speed Flash Clarifies a Whirling Bird, Reveals What the Eye Never Sees

By ROBERT D. DUNCAN AND VANCE A. VAIL, and others, from the Department of Biological Sciences, University of New Mexico, Albuquerque, New Mexico, and the Department of Zoology, University of British Columbia, Vancouver, British Columbia, Canada

Figure 1. Aerial view showing the location of the study area in northern Thailand. The inset shows the location of the study area in northern Thailand. The inset shows the location of the study area in northern Thailand.



By Inch Hand the Way

To see a Bird in a Tree
Is a Sign that Good Will Come.



21



By Inch Hand the Way
To see a Bird in a Tree
Is a Sign that Good Will Come.

Partner Poetry Selection
**Want You to See
the Roots of a Man**

I am the man who
walked alone in the
darkness of the night,
and when I came home
I was the only one left.
I am the man who
lived in a house
with no windows or doors,
and when I went outside
I was the only one left.
I am the man who
had a wife and two children,
and when I came home
they were gone.
I am the man who
had a job and a car,
and when I came home
they were gone.
I am the man who
had a house and a garden,
and when I came home
they were gone.
I am the man who
had a wife and two children,
and when I came home
they were gone.
I am the man who
had a job and a car,
and when I came home
they were gone.
I am the man who
had a house and a garden,
and when I came home
they were gone.



[*On the other hand*] [*I*]
[*you*]

A gel electrophoresis image with 12 lanes. Lane 1 contains a molecular weight marker. Lanes 2 through 12 show DNA samples. Lane 2 has a prominent band at the top. Lane 3 shows a band near the bottom. Lane 4 has a band in the middle. Lane 5 shows a band near the bottom. Lane 6 has a band in the middle. Lane 7 shows a band near the bottom. Lane 8 has a band in the middle. Lane 9 shows a band near the bottom. Lane 10 has a band in the middle. Lane 11 shows a band near the bottom. Lane 12 has a band in the middle.

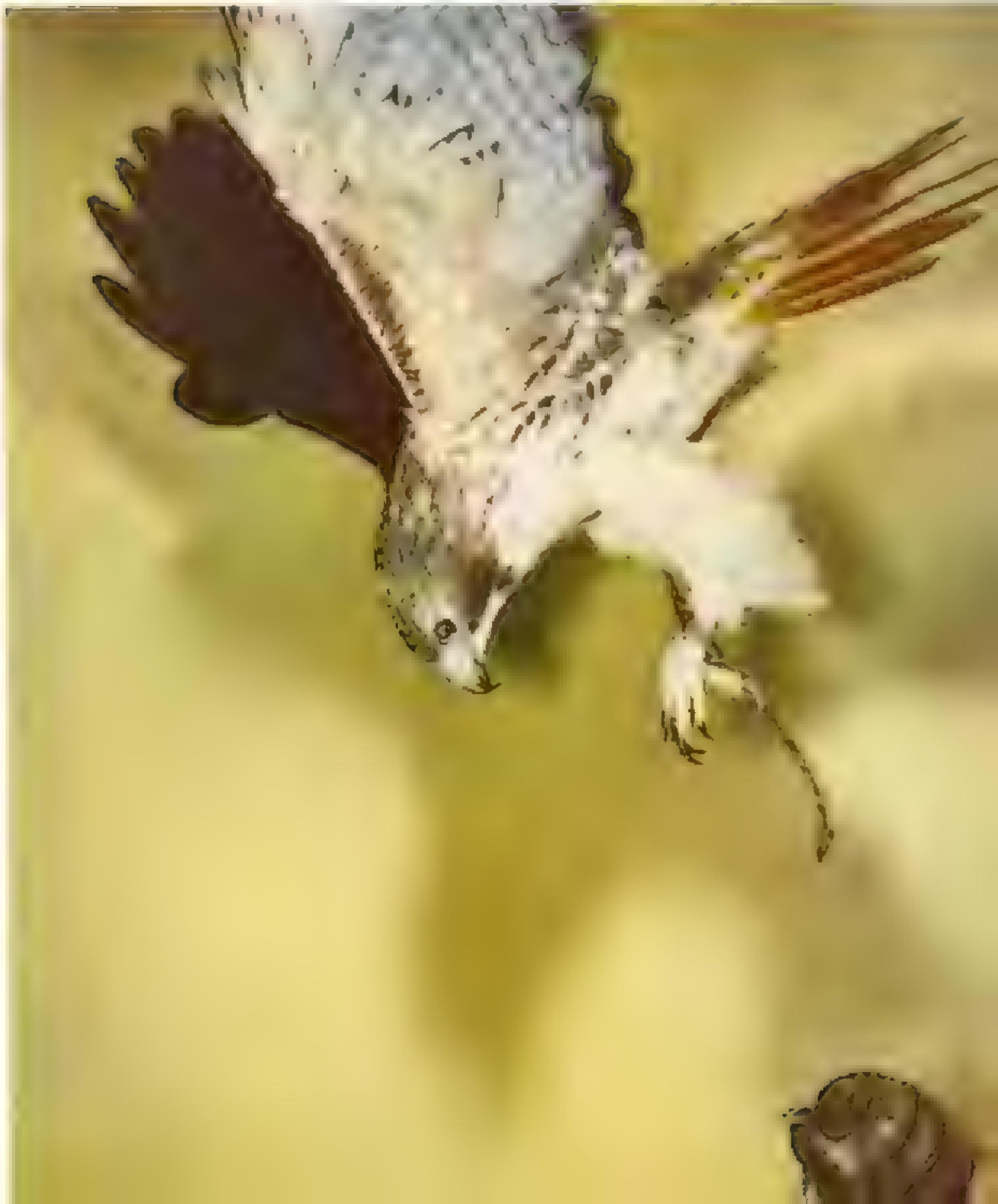
一一

Specie I. *Lycosa Nubecula*
Hab. More prettily
than *L. tenuis*



Red-tailed Hawk
Mistletoe
Wrens

Red-tails
Mistletoe
Wrens





No. 1 Red Mouths Gape for May Flies Brought Home by "Old Men" Canada Warbler
Nest in a spruce tree, 100 feet from ground, near the top.

Wander Child Is Host To Her: Sweet Danger Doesn't Realize She Has Two Impostors

Nest in a spruce tree, 100 feet from ground, near the top. Mother bird is a sparrow hawk.



It was difficult to photograph a hawk and a careful study of the use of the different feathers to work out the correlation between wing shape and wing use, as practised by different species.

Of course, certain relationships are obvious, such as the long, narrow wing of gulls for gliding, the broad rounded wing of buzzards for soaring, and the short, rounded wing of grouse for quick bursts of speed. The numerous minor variations, some of which are manifest in the accompanying photographs, will require much study before they are fully understood.

Speed Flash Quicker than a Wink

Another action which is too quick for the human eye, but which is recorded by the speed flash is the movement of the bird's inner eyelid, or nictitating membrane, as it is called. This translucent membrane flicks across the eyeball to remove dust or to give protection to the corner when necessary.

When a robin feeds its young, the membrane naturally draws across the eye to keep out the bill of the youngster or to keep the sand on the worms from lodging where it should not.

An examination of the accompanying photographs of the robin shows the eye's action across the eye when the bird's feet touch the nest (page 776) and completely across it during the act of feeding (page 777). The young bird's eye is protected in the same way.

The position of birds' feet in flight and upon landing has always given naturalists cause for conjecture and argument, and taxidermists and bird artists are frequently in disagreement. The tremendous forward swing or extension of the legs of hawks and falcons upon alighting or pouncing on their prey is seldom credited or shown with accuracy in paintings or in habitat groups of mounted birds.

Two of our Cornell students, Heinz Meng and Steve Collins, have been training hawks, and this gave us an opportunity to record leg action as well as wing action when the birds pounced upon dead mice or returned to their masters' fists (Plates X and XV).

It is remarkable how tamed these birds become when properly handled, celebrated though they are for their wildness.* Captured when fully adult, and knowing only the fear of man and the ferocity of killing its prey in midair, a peregrine falcon, after a few months of training, becomes gentle and flies

to its trainer's hand at the proper whistle.

Tossed into the air, given his liberty to go where he pleases, he waits on the pleasure of his trainer and circles about until the whistling tone tells him there may be food at his owner's feet, if he strikes the imitation bird from the air.

In striking as in alighting, the hawks extend their legs to the utmost, so that the weight of their bodies in bending the tibiotarsal joint will drive the sharp claws into the victim or about the perch where the hawk alights. With the larger hawks the trainer must wear a heavy glove.

The accompanying photographs of the hawks do not show where the feet are carried during normal flight, but with binoculars they are easily seen under the tail as the birds circle overhead.

The long legs of herons and cranes trail out behind and are easily seen at a distance. But how does a small bird hold its feet in flight? Most of the accompanying photographs are of birds about to alight when the legs are being let down like landing gear. The house wren, however, still has his feet tightly pressed against his breast (page 788), and the others are apparently dropping their legs from a similar position rather than from beneath their tails.

The ridiculous posture of the sora rail (page 789) is due to the fact that when rails take off on their weak wings they continue to claw the air with their long toes as if they were still running over the mud flat, and it is only when they get well under way that their legs trail out behind like a heron's.

At First, Camera Caught Only Tails

Wing shooting with a shotgun, whether a quail, grouse, ducks, or clay pigeons, is usually not very successful for the two. It takes years of experience before one can confidently place a three-foot circle of shot on the exact spot where the flying target is expected to be at a somewhat uncertain fraction of a second later, depending on the distance, the speed, the wind, etc.

And so, likewise, with the high speed flash of flying birds, if one waits until the bird is at the desired spot before pressing the release, one will photograph a blank every time—or at best get only the bird's tail on the film.

The first time any of us used the apparatus with which the accompanying photographs were made, we focused on a spot that chickadees and nuthatches were expected to pass in coming to a feeding station. They passed the spot all right, but so rapidly that out of 12 shots fired by three of us, the resulting bag of bird photographs was three chickadee tails.

* See, by Frank and John Craighead, in the *National Geographic Magazine*, "Life with an Indian Prince" (February, 1943) and "Adventures with Birds of Prey," July, 1943.



No Welcome Mat! A House Wren's Door Frosties with Stones to Discourage Visitors

The wren's nest entrance is a hole in the side of a tree trunk. The bird has collected stones and sticks to塞住 the opening. This is a caterpillar.



In Silent Appeal, Not Roarous Shout, These Blue Jay Babies "Open Wide"

The jay's nest entrance is a hole in the side of a tree trunk. The bird has collected stones and sticks to塞住 the opening. This is a caterpillar.



Panned and Reversed a Bird Red "Ran" Through the Air as He Would on Land

In spite of their weak wings and awkward appearing take-off technique, some return across the Caribbean to winter in Venezuela and Peru. In the Atlantic States the rails are considered game birds. Each year they run a hunters' gauntlet in the salt marshes.

The photographer has to learn from experience his personal delay in reaction from the moment he says to himself, "Shoot!" until the message is conveyed to his finger tips set to the resulting flash, and he has to estimate how far the bird will travel during that delay.

Of course, there are no critiques if he does not center his birds, but there is considerable disappointment and loss of face when an otherwise perfect photograph comes out of the developer showing only the tail of a bird.

Naturally, the operator has no control over the position of the wings of the bird he is just graphing and many a dud results, even when he becomes expert at centering; the bird can let the wings down below or concealing the bird's head, or in some other awkward position.

Practice Shots at Feeding Station

We began our practice shots with the high-speed flash at a feeding station for birds where their comings and goings could be somewhat regulated, for it is necessary to have the apparatus set up in advance, with lens and lights trained on a definite square foot of space where the action is to take place. In addition, the action has to occur

on a very narrow stage, for the depth of focus is only a few inches.

Therefore, I trained the birds to feed in front of our blind on a shelf a foot six inches long and two inches wide, and I placed a convenient perch about two feet from the shelf on which the birds were expected to alight before flying to the feed.

I knew they would then traverse a definite path; I would have plenty of warning and could concentrate upon centering the bird on the first.

Eighteen inches, I discovered, was my delay in reaction, so that I had to push the shutter release one-tenth the bird left the prepared perch if I wished to catch him in the center of my film, which was focused on the square foot 12 inches distant.

Red squirrels and chipmunks do not move as quickly as birds, I discovered, for when I made the same allowance for them, as they jumped from the perch to the food shelf, they had barely reached the film when the flash recorded their jump.

Even after all these preparations, I sometimes photographed the blank blue back ground which I had set up behind the food shelf to avoid the blackness of most flash-



A Barn Swallow, Preferring Man's Abodes, Studies a Home Wreath with a Wing.

It is not unusual to see swallows hovering over man's dwellings, but it is not so common to find them in the open country. This bird was seen at the entrance to a mine in the mountains of Mexico. When it alighted on a wire, it spread its wings and studied the wreath of wire with a wing.

At first I thought the reason for this was that the birds occasionally changed their tunnels after leaving the perch and flew to the end of it or to the top of the set tunnel, after all, I thought, it was a blind.

It turned out, however, that this was not entirely true. This little bird, which became a favorite to the others after a few experiences. Even though they could see no motion or other indication of my intentions in the blind, they would change their course in flight and sit in some other direction, as if to flush me out of the hole.

It was a good place, however, to shoot the skeet to practice with at the close session—

and was it not a good opportunity to do so?

Arguing with "Peck Order"

Now that I had the time and energy, I began to study the behavior of the birds in detail, to learn more about them. It was not often that the bird of prey took a back place in the plane of focus, but occasionally a lucky shot resulted, such as one of a redpoll trying to scare another. He would fly up, one wing and points his bill at the intruder, in order to intimidate him. In most of the instances at least one of the scurrying birds proved to be out of focus.

Luxembourg, Survivor of Invasions

By SYDNEY CLARK

With Illustrations from Drawings by Maxwell T. Johnson

LUXEMBOURG has been surviving invasions for more than a thousand years, but America's part in her latest and most perilous survival—from the Battle of the Bulge in 1944-45—was directly responsible for my own survival as a postwar pleasure traveler in the Grand Duchy.

Some twenty months after Field Marshal Karl Rudolf Gerd von Rundstedt's attack and repulse, I entered the city of Luxembourg, the capital, and at the nearest hotel respectfully asked for a room.

"Sorry, sir," said the clerk, in good English. "We've had to turn away over 200 people today. We have nothing at all."

Thinking the place might be especially in demand because it was a good hotel directly opposite the station, I tried another, then another, and then ten others in swift succession, being met very unfriendly indeed.

Vacationists Tax Luxembourg Hospitality

There were almost no American or British travelers in evidence, and scarcely any French, for their own Government's severe currency restrictions prevented them from touring outside of France; but it seems that I had reckoned without the Belgians. As visitors they can enter Luxembourg without passport or visa, and their francs are interchangeable at par with those of the smaller country.

All Luxembourg is holiday terra r to tens of thousands of Belgians, and their number that day was much above normal, since this was the week end of July 21, Belgium's national holiday.

It was late afternoon, and still another hotel manager was giving me his polite regrets, when a timid girl of about 14 appeared and told him her mother had a room. She would take two ladies or a man and wife, provided they would stay at least a week.

The manager turned brightly to me and asked if I would pay as it for two.

"Of course," I said eagerly, but the girl, a sterilist, interposed firmly: "No. Mamma said it must be two profiles, and they must stay a week."

"Go along with her, anyway," said the manager. "You can talk her mother into it. Don't let the girl out of your sight."

It was a good half mile to her home, and during the walk we talked in French. As I answered the youngster's questions about

Hollywood, she melted utterly and became my friend and champion. When I saw her mother, I knew that I had need of a champion.

"No, Kathy," said the older lady very sharply in the Luxembourg patois, which my knowledge of German enabled me to grasp. "No. I told you to get two ladies or a man and his wife."

"But, Mamma, he . . ."

I interrupted and explained in German that I was an American writer come to see where my countrymen had fought in Luxembourg.

"Your Soldiers Saved My Country"

"I'm Amerikaner! Doch! And are you a friend, perhaps, of the great General Pat-ton who died and who is buried at Hamm near here?"

"I met him," I replied, making what I could of a very minor contact.

"But that doesn't matter," she said, and her whole manner had changed to one of eager hospitality. "You are an American. Your soldiers saved my country. More than 8,000 of them lie at Hamm. Come in, come in. I will show you your room."

I presently went out to see the city and to dine, and when I returned at 10 o'clock I found a mother and daughter leaning out of a window to watch for me.

"Do they have chocolate in America?" called the girl.

"Yes, Kathy. We have chocolate, and gum, and tall buildings, and big cities."

"Which one do you live in?" she asked as I came into the house.

"Boston."

"Ah! Is that near New York?"

"About 300 kilometers."

She thought I said meters and curly squealed. "Three hundred meters! My, that's pretty neat!" I'd like to live that near to New York."

"Go to bed, Kathy," called her father from another room. "Let the gentleman rest."

"Yes, Papa." But she didn't go. Her mother asked if I should like to have her wake me in the morning, but I said I had an alarm clock. Kathy pleaded to see how it worked, so I showed her.

"Tell me about the tall buildings, sit," she urged eagerly.

"Go to bed, Kathy," from the other room.

"Yes, Papa."



A Flower-vending Countrywoman Finds Business Brisk in a Luxembourg City Square

Her flower basket was overflowing with roses, carnations, and tulips. But the woman who sold them had no money to buy bread. She had come from the country because she had heard that in the city there was work. She had come to Luxembourg, which had been captured by the Germans. Now her husband and two sons were dead, and she had nothing left. She had come to Luxembourg to earn money to support her mother and her two small children.

"She had to sell her flowers after the war," said the woman. "They were very pretty, too. Do you know King George VI? What was General Eisenhower like when you met him?"

"He's a soldier," The voice was thin, almost broken.

The girl was quickly dressed, and very busily so. She fastened her belt and started to pull her cloak over her head. In it was the radio battery. Her mother removed the radio and took what she was to sleep in. But before she did, she darted back and snatched both in hands. Her eyes glistened. She thought not so much words but pictures of home and land and Red.

It was another moving expression. I so rarely saw men in Luxembourg with no

real job, my heart had been so banished into an area of time and the unknown forever.

It takes a terrible toll and continual losses to continue such a war — even among persons in many parts of the Grand Duchy. Despite the terrible destruction wrought by our airmen and ground forces in blasting Von Rundstedt's offensive and in driving his forces back into Germany (60,000 prisoners were made) Luxembourg folk in the past year have suffered probably more than any other nation in Europe.

I was glad to have a day off without trouble through the woods around the Aarberg, at first. The road was lined with crosses and our old friend appeared again.



Sons and Daughters of the Royal Family Honor Their Father on His Birthday

Left—General Prince Jean, bereft of General George S. Patton, the Melville Hatch Tract which the General had given him to his wife, Mrs. Jeanne, is now the home of the King and Queen of Luxembourg.

and it must wrench the heart of General Jean in their endless grief rows.

At the time of my visit, General Patton's cross was Number 222 in Plot E.E., Row 9, and it was exactly like the others except that it bore four stars. Number 220 was for Wayne A. Doster, Number 221 for John B. Praywara. Numbers 223 and 224 were for A. C. Spellman and J. M. Opyrdell. None of these graves marked the bodies of George S. Patton Jr. and his wife, Jeanne, who were buried in the war cemetery in the town of Luxembourg, the capital known also as "The Little City."

Later, Siegfried, Patton's grave was moved so that the crowds it attracted would not intrude on other graves (page 798).

The General was buried December 24, 1945,

and it is only a year since he arrived to great effect northward from Luxembourg into France. It was his bad fate to die of an automobile accident rather than in battle, but he is no whit less revered for that. He has become somewhat of a patron saint to Luxembourg.

Smaller than Rhode Island

The area of the Grand Duchy is 999 square miles, as if the country had been sternly measured by the survey party members who drew the boundaries for the new nation itself (map, page 798).

Thus Luxembourg is a small place which equals the size of Rhode Island, and is approximately one-tenth the size of Connecticut.



Thrice German Troops Attacked Through Peasant Luxembourg

Suspicious thrusts into France and Belgium violated her territory in 1914, 1940 and 1944. For centuries the Grand Duchy has survived wars, invasions and peace conferences. On March 17, 1948, the Benelux nations (Belgium, the Netherlands, and Luxembourg) joined Great Britain and France in a 10-year pact of mutual assistance and economic cooperation. That compact places Luxembourg in this Western European union. Its dark grey area shows the extent of the Von Rundstedt offensive of December, 1944.

Minnesota. Its army before World War II numbered about 250 men.

Placed by fate in a perennial path of invasion, little Luxembourg has had to weather successive gales of war. If her aggregate forces have been of minuscule proportions, her spirit has been strong; and it has always been fueled by a passionate insistence on her own integrity as a free nation. With the physical power of a babe in a whirlpool, she has fought like an athlete, using ingenuity as muscle.

To see ample evidence of this, we need not

go further back than the period when Germany developed her habit of bad faith and aggression.

In 1866 the German Confederation, of which Luxembourg had been a member, fell to pieces, and the various neighbor nations of the Grand Duchy shortly gave her "parchment bulwarks" by guaranteeing her neutrality and later her absolute inviolability. In 1867 the strong fortress of the city of Luxembourg, which had been garrisoned by Prussian troops, was ordered dismantled.

Germany signed a pledge that Luxembourg's railways would never be used for war purposes. But infamy had no meaning for the Kaiser's forces, and on July 31, 1914, they seized the Luxembourg border station of Taxisvienges. Two days later armored trains from the Reich, with troops and ammunition, were rolling at will through the Grand Duchy, whose violent protests were swept aside.

A Franco-British notice, previously printed at Koblenz and held in readiness, proclaimed

despite "all the most strenuous efforts of His Majesty, the Emperor of Germany, to preserve peace," France had violated Luxembourg and attacked Germany from its soil, so no other course was open than to counter these attacks.

The short, ugly truth, for this false enactment was spoken, in obvious implication, by Chancellor von Bethmann-Hollweg himself, who stated on August 4:

"We have been obliged to ignore the just protests of Luxembourg."

"The injustice, I speak frankly, the injustice

that we are committing we will endeavor to make good. Our military aims have been attained.

On the day of the invasion Germany had already been informed by France that there was no injustice. The *Koblenz* proclamation and the German Chancellor simply did not tell the same story.

The sober fact France had withdrawn her troops for a depth of ten kilometers on her side of the Luxembourg border and forbidden her troops to go beyond that point lest "incidents" occur.

Luxembourgers Chose Cause of Freedom

The Luxembourgers immediately gave their support almost unanimously to the Allied cause. Thousands of men, having no家 of their own, left their country with the French general forces to France and enlisted in the French Army. Of the 3,200 Luxembourgers who fought in the Allied ranks in that war, 2,000 lost their lives.

Grand Duchess Maria Amalia abdicated the throne in 1919 and retired to a Carmelite convent in Modena. It is said that she died at the age of 80.

Her daughter, Grand Duchess Charlotte, is still the reigning sovereign. In World War II she behaved with as much insight and courage as Queen Wilhelmina of the Netherlands, fighting her nation's cause from free Britain until she returned to Luxembourg. A Luxembourger has recently testified to me,

"As the German aggression of 1939 invaded Luxembourg, the Grand Duchess Luxembourg firmly in the book - path of conquest."

In this connection, recall President Roosevelt's personal appeal to Hitler on April 27, 1940, in which he pled for that he would



Muchly, He Plays in the Bond of Munden's Art Festival.

Luxembourg is a small country situated on the banks of the Our River in northeast France. During the early 1930's, the Luxemburg had capable of sending 100,000 men to defend their country. But after the Nazi invasion, they were unable to do so.

not invade 31 specified countries, one of which Luxembourg was one.

Hitler chose to consider it a very funny document. He read it aloud to his adjutant, the Reichsführer, which reacted with laughter at the Leader's boorish humor. I heard it all over the radio from a Paris cafe and I will never forget it because it was Hitler's idea of Luxembourg in the list. He was in high jollie. A very funny paper this, from Warmaker Roosevelt!

After war broke out, and as late as May 1940, the Nazi Government declared, "Germany does not intend to impair the integrity or independence of the Grand Duchy either now or in the future."



Plowed Fields, Forests, and Trim Towns Make a Peaceful Pattern in War-torn Luxembourg
The country's capital, Luxembourg City, is visible in the distance. The town of Differdange is also visible in the foreground.



It Came Not At My Call With Scenes in the Path of the Savage Host of the Bulge

The author of this book is a man who has been through many battles. He has written this book to share his experiences and to honor the soldiers who fought in the war.



General Position Takes in the Ensemble as Soil He Liberated

It is not clear whether the results of the present study can be generalized to other countries or other ethnic groups. The sample size was relatively small, and the participants were predominantly white, middle-class, and female. Future research should include larger samples from diverse populations to examine the generalizability of these findings.

The pay-off was modest following the initial
outlays, so the trading test-letter was published.
The longer-term results showed a significant
weakening in the Eurozone with its
trading partners. The Eurozone with its
main trading partners had lost about 10% of
its value.

In the beginning, the system did not receive the support of the government. The first step was to hire and personnel and begin to do more research and planning. A committee [was] formed to look into the matter. After a while, the committee was enlarged to include [the] best [and] brightest. There should always be a balance between the old and the new.

Everyone is talking about the famous Valley
Cherry blossoms, and I am too.
I just had to take a look at them myself.

Symbolism is not for me substitution
in the sense that I am not interested
in it. I am not compelled to substitute
one thing for another. I am interested
in finding a language which can express
the truth of what I see. I am not
interested in symbols, which is the first
stage of expression. I am interested in
and in the second stage of truth.

The Research Institute of the Public Works Engineering Organization of Japan (1970) 20

Guerrilla's side. Germany made Luxembourg an integral part of the Greater Reich and征集ed all men of military age into the German Army, but a member of the Government told me that 60 percent of the men mysteriously "disappeared." They turned up later in the Allied armies or remained under cover, working secretly with the Free French underground forces.

In spite of this, the Nazis were able to round up several thousand young men between 18 and 24 and sent them to the Russian front. Up to date, more than 2,000 Luxembourg young men are missing, in addition to the number established as killed in battle.

The Germans looted most of the homes of patriots who were in exile or whom they had deported or imprisoned. Thirty thousand Luxembourgers were forcibly deported from the country.

When the war finally turned against Germany, her forces were driven out of Luxembourg, in September, 1944. A wave of infinite relief came to the Grand Duchy. By a veritable miracle she had escaped desolation.

"The Rundstedt Thing"

But then came the awful anti-climax, the December Battle of the Bulge, which local folk bitterly call "the Rundstedt Thing." That "hangover" of war's harsh fury did what the earlier invasions had not done. Though it mercifully missed the capital by a narrow margin, except for a few projectiles, the fighting literally laid waste all the northern part of Luxembourg; it spread over to the Belgian Ardennes and ruined that section, too.

The traveler may easily cross the border from Wiltz to Bastogne and visit the wreckage of bastogne. It is a hideous spectacle, but the Belgian town is enormously proud and grateful, despite its ruin, for the stand made there by the Americans.*

It seems to me a wonderful evidence of recuperative power that so soon after this holocaust the Belgian Ardennes and Luxembourg became again regions of high holiday.

Even Pétternach, the most battered town in all Luxembourg, I found awash with tourists, hundreds of them Luxembourgers, and it was the same in ravaged Vianden and Clervaux. Every posh hotel that could make a few of its rooms habitable did so and filled them promptly with lighthearted vacationists.

The fact that the capital escaped with slight damage is a boon to all visitors, as well as to the Grand Duchy, for to me there is no more strikingly situated city in Europe. It perches on a rock base shaped like a curving and decorative M, the strokes of the letter being

the dizzy deep valleys of two small streams called the Petrusse and the Alzette.

The base of the M is a glorious semicircle of hilly park where once stood thick walls, for this city was formerly an "Inland Gibraltar," one of the strongest fortresses on the Continent. Because the fortress was dismantled in favor of the parchment ramparts earlier mentioned, after the Treaty of London in 1867, the city now bristles with steeples rather than guns. But the old ramparts, with their miles of underground galleries, are one of its greatest attractions.

From the lofty bastions above the river valley the scene is startling in its grandeur. Best are the views from the Boulevard Franklin D. Roosevelt and from a point, with potter's wheel orientation disk, where two streets called Corniche Way and Adam's Rue (Chemin de la Corniche and Côte d'Adam) meet high above a hairpin curve in the Alzette.

The grand chateau palace, which the Nazis used as a tavern, is near this point and worth seeing as a study in royal simplicity. Were it not for the alert military guards at the entrance, one would think it merely a fine private residence, one of many in the city.

Radio-Luxembourg, located in the capital, is one of Europe's most influential broadcasting stations.

Another sight, of much more urgency to the average traveler, is an advertising sign filling the sky of a side street near the palace with metal letters by day, neon glow by night, and gastronomical allure at all times. It says simply STUFF, and that is precisely what one does upon entering the establishment.

"Stuff" is the name of one of the most appealing restaurants in Europe. I found its fare and everything about it exactly the same as when I first discovered the place (an I obeyed its cleaning command) in 1929.

A Paradise for the Palate

For some reason hard for the visitor to grasp, Luxembourg, even after its latest and hardest survival of invasion, very quickly recovered its capacity to provide good, ample food and to cook and serve it well. To my delight I found that a foreign partaker of it need not cope with ration tickets, as in most lands, or even pay extra for the lack of them, as in Belgium. In every Luxembourg restaurant, I, as a foreigner, was asked merely to sign a food register and record my nationality and permanent residence.

"How does Luxembourg do it?" I asked myself and then others. The best answer I could

* See "Belgium Comes Back" by Harvey Krimmer, NATIONAL GEOGRAPHIC MAGAZINE, May, 1948.



July 19, 1903. - The first generation of *Thysanococcidae* hatched from eggs laid by the female which was captured at the same place on June 25, 1903.

Left: The Ruins of Cormac's Abbey; Upper Left: Hitter Bridge Wrecked by Ma Chlenn (Right), Opposite Parish Church





In Battered Luxembourg a Gothic Arch Braces War's Destruction and Youth's Bold Spirit

The morning after the first gas raid on Luxembourg, the city was still smoldering. The author, who had been in the city during the war, found it a scene of desolation. In the foreground, a group of young men stand in front of a ruined Gothic arch.

It was that the Nazis considered Luxembourg a soft country and that they had little trouble getting it when they wanted it.

However, the Germans had lost it considerably, and I fell back on the belief that this bucolic land is especially favored by Nature and that its people have survived eating a winter of special immorality.

The Staff proved an excellent place in which to examine the language of Luxembourg. In one of its books was a gay quatrain which may be translated thus:

From the hills of Luxembourg
The people are simple,
They are good,
Quarrels soon end —
and all is well.

The words for "apple," "peach," and "orange" were all the same. How could this be? Well, we were told, in Germany

A patron of Staff catching my interest, addressed me in French and with a curious beligerence:

The popular tan
singer here is nothing like German, monsieur
though it might seem so to you. It comes
straight from Holland Dutch. Germans can't
understand us Luxembourgers when we speak
the national tongue.

I politely agreed with all he said, but the language of the Grand Duchy still looked odd. I listened to the very much like German, I saw an advertisement on the Staff menu stating that a certain brand of cigars was "Kraut come' bricht am ganze Land" (known as the best in all the land).

I took out my wallet and studied my Luxembourg paper money of the denominations of five, twenty, and fifty francs — marked



A Biblical Precedent Guided Potato Growers of Dazzling Time

Like Isaac in Canaan with Ruth many flat fall seeds were sown in the "poor" fields where man was poor, but proud might not be poor. The Grand Duchy state helps potato growing has developed rapidly in Luxembourg's northern part. In 1946 the Grand Duchy reported nearly 700,000 metric tons of potatoes.

Funet Fraise, Zitadelle, Front Lutzelbourg Fortress
Each hill here also the country — Luxembourg — which is Luxembourg (Front Lutzelbourg — Front Fortress) is well as the French and Flemish border.

I thought of the frenzied cry of Isaac, having carved on a stone pillar in the Plain of Armes: *Wir Wollen Bleiben Was Wir Sind* (meaning "We wish to remain what we are") and mentally compared it with the German *Wir Wollen Richten Was Wir Sind*.

It did certainly "seem so" to me, but I remained on a plane of politeness with my self-appointed informant. It seemed to me significant that he felt shame and anger that a

designer might consider his language similar to that of the defeated Reich. I decided then that it would take a hundred years of patient effort for Germany to win the friendship of the little land which she has so cruelly and repeatedly violated.

A Land of Linguists

Most of the people of Luxembourg speak French (the official international language of their country) as well as German and their own plom. Many also speak English, learned in school.

An American officer in Luxembourg during the war encountered a rosy-cheeked little boy being driven on a sled by his mother. When the boy smiled a greeting the officer said, "Bonjouir," whereupon to his surprise the lad exclaimed to his mother in perfect English, "Why, he is French!"

In the local newspapers three different languages may appear on the same page. One article may be in German, one in French, and another in the Luxembourg plom. For the benefit of Americans during the Battle of the Bulge English was added to this palimpsest.

Religion, government, and steel are the three foundation pillars of the Grand Duchy, and all are interestingly represented in the capital.

Religion I place first, because its power over the people is tremendous. This is a Roman Catholic land of intense, old-school piety.

For two weeks during the month of May almost the entire population of the country makes a pilgrimage to the capital to worship "Our Lady of Luxembourg, Consolatrix Affectionum," the patroness saint of the Grand Duchy for 350 years.

At Sunday masses in the capital's cathedral, a packed congregation comes thundering in with its responses in such prodigious volume and such unison that one can have no doubt of the Church's hold on the rank and file.

The Cathedral has a special treasure—the tomb of John the Blind, as colorful and valiant a warrior as ever brandished a sword. He was Count of Luxembourg as well as King of Bohemia. When stricken blind, he still fought on, wherever a fight was to be found. He led his troops personally at the Battle of Cravant and was killed there fighting for his ally, France.

A popular story, though historians discredit it, is that the British forces were so impressed with the bravery of John the Blind that they paid him the compliment of stealing his ostrich plumes and his motto, *Ich Dien* (I Serve). These were adopted as the badge of Britain's Prince of Wales, and still remain so.

The government of the Grand Duchy centers in buildings close to the palace. There is a Chamber of Deputies of 51 members and a Council of State of 15 members, the latter appointed by the Grand Duchess for an indefinite term. Hardly ever is the country shaken by that bane of Laetral democracy in Europe, the cabinet crisis, or *crisis*.

Iron and steel form a tremendously stout support for Luxembourg's economy, bringing business throughout the southern portion of the country.

More than 7,700,000 tons of minette (iron ore) were mined here in 1937, for example, and 5,000,000 tons of pig iron and steel, in about equal proportions were produced. All this is greatly curtailed at present because of Luxembourg's difficulties in obtaining coal.

Arbed and Stadia are the composite names (made from initials) of the two largest companies, which dominate the industry. Arbed's building, on the hill between the Pétrusse viaducts and the railway station, is one of the most modern and pretentious in the capital. During the Battle of the Bulge it served as Headquarters of Maj. Gen. O. P. Weyland's XIX Tactical Air Command, cooperating with General Patton's Third Army.

The steel region in the southwest is as smoky and drab as it is industrially important, but Mondorf les Bains in the southeast, Luxembourg's one bid for the society that visits spas, is as neat a little resort as ever brought wry faces to those who quaff curative waters. The whole northern half of the country is a glory of travel, despite the pitiless battering of war which laid 38 percent of the country in ruins.

Potatoes Left for Poor and Proud

Rising from war, this little land is helping herself. From one end to the other—only a two hour drive—one sees a country at work. New tools are rising against rain and cold. Grassy fields cattle in the dewy grass and knits warm socks for winter. Sturdy folk harvest potatoes and grain. Beside the Moselle young girls pick grapes. Children drive home the herds at dusk.

In one field Maynard Williams, who made the photographs for this article, noticed what seemed like waste: many good potatoes left on the ground.

"Our poor people are proud," his driver explained. "But anyone is allowed to pick up what the harvester leaves behind."

Echternach, scene of the famous Daiting Procession in honor of St. Willibert, is a town of indomitable personality. It lies on the south bank of the small Sure River, with

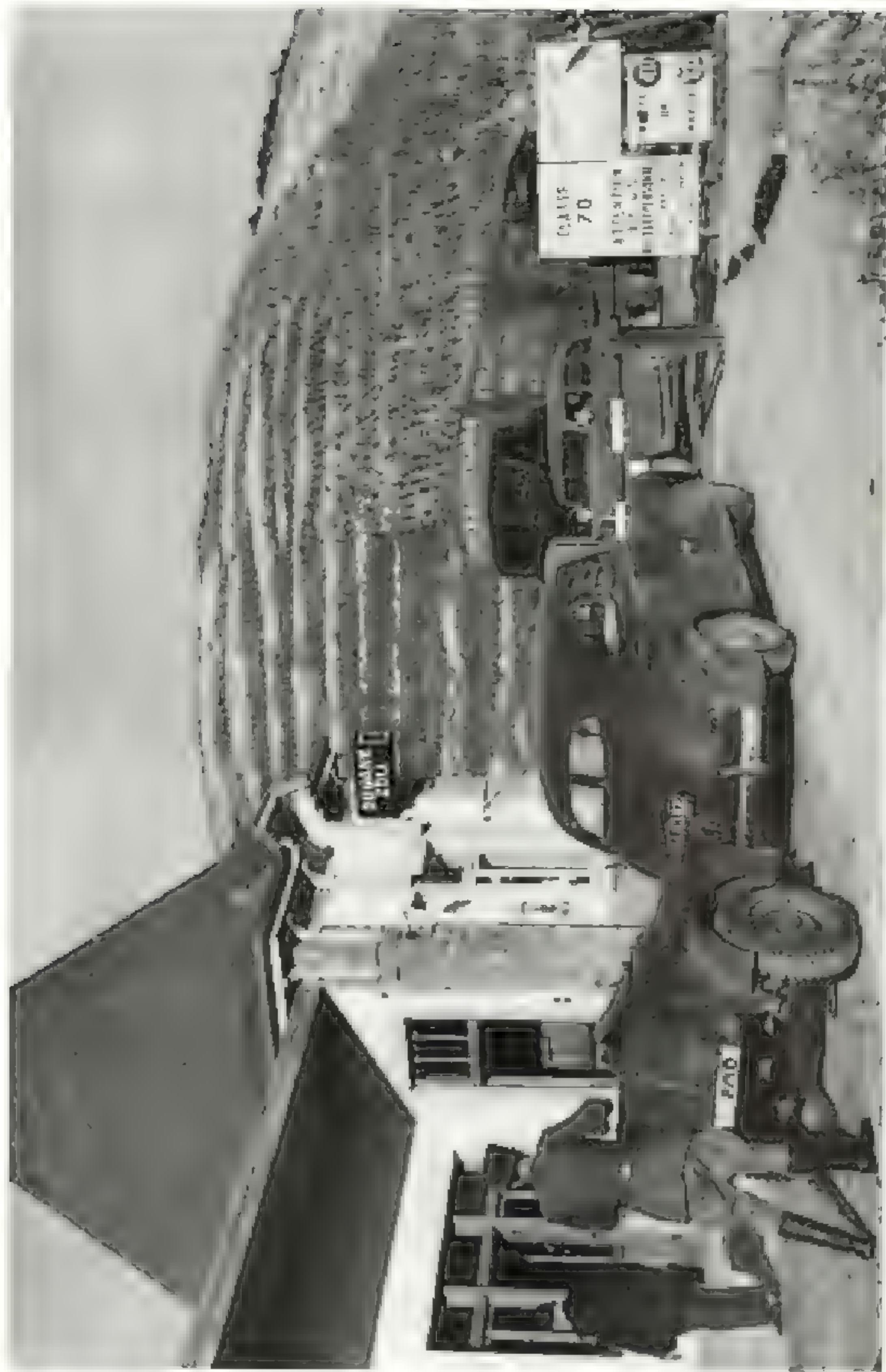
Luxembourg, Survivor of Invasions

25



A War-born Refugee Ponders a Picture-taking Monk from Her Shell-shattered Home

She had to leave her home days ago, all ways to the south. Her home town of Echternach, near a frontier fortification, was one of the battle-fields between Germany and France during the Battle of the Bulge. The monk who took this picture was a member of the Franciscan Order.



A vintage television set with a large "FBI" logo on the front panel, sitting on a wooden stand. The television is a CRT model with a large, thin vertical antenna extending from the top. The front panel of the TV features a large, rectangular logo in the center that reads "FBI". Below the logo, there is some smaller, illegible text. The overall appearance is that of a mid-20th-century television.

In Hong I conducted a brief interview - *Le Quatre à Trois* - with
the author of the book, Mr. Wang Yiliang, who is a well-known
writer and historian.

In His Wooden House He Writes His Books for Wine
In His Wooden House He Writes His Books for Wine
In His Wooden House He Writes His Books for Wine
In His Wooden House He Writes His Books for Wine



Germany across the way on the north bank. A partly Roman bridge used to connect the two, but it was bombed to dust in 1944, for here Von Rundstedt launched one wing of his massive offensive.

The town is a tragic wreck, yet I found holiday in full swing. Twenty or more hotels had reopened for tourist trade (page 802).

Echternach Dances to Honor a Saint

On an earlier occasion, before the war, I witnessed the Dancing Procession, which occurs on Whit-Tuesday, the 52d day after Easter. Fifteen thousand persons participated, dancing from the German side of the river across the bridge to the town church and the tomb of their holy patron, St. Willibord, who cured the local cattle of a bovine affliction more than a thousand years ago.*

They danced or capered five steps forward, three back, five forward, three back, and so on, forming rugged lines held together by frayed handkerchiefs which the dancers clutched in either hand.

Some of the young men were dancing as hirelings for others who wanted to honor the saint but had not the strength to do so personally. But the ranks of the dancers were older folk. Some of the stout old grannies, I thought, would certainly die of exhaustion after another five-and-thirteen, but I heard of no fatality. Forty or fifty brass bands and numerous groups of violins filled all the air with sound.

A priest surveying the long line saw a cluster of girls whose arms were bare! He sent them home to put on their coats though the temperature was 85°. In such matters, Luxembourg is highly conventional.

In the postwar era the Whit-Tuesday procession goes on as of yore, though it cannot cross the bridge that isn't there, and St. Willibord's remains are no longer in the town church but in the crypt of the abbey basilica where they were placed for protection from bombing.

This basilica is itself a war victim, an almost total ruin, but Luxembourg hopes to restore it. A restoration worker took me in to see the tomb, lighting a newspaper as a torch, for the place was as black as solid jet.

"You're on your own, monsieur," he said pleasantly. "It is forbidden to enter here. Pieces of stone still fall from the cornices. Look here," and he showed me a bad gash in his scalp where a fragment had fallen on him.

Echternach, in its contrast of tragedy and quiet, seemed to me a living laboratory of human behavior. Three modern invasions, the last a cyclone of steel and explosives, have

left its habits and ways of life unaltered. Vianden is on the Our River, which forms the Luxembourg-Germany frontier for many miles. But at Vianden a Luxembourg pocket about a mile in depth extends into Germany on the east bank.

Of all towns in the Grand Duchy, Vianden is the most spectacular for beauty of site. Occupying both banks of the Our, it climbs the hills steeply and culminates in the sky-piercing 10th-century castle of Orange-Nassau-Vianden, which looms like a symbol of feudalism high above town and river. From this castle came the present ruling dynasty of the Netherlands.

When I first visited it, between world wars the castle was impressive and even dispensed a certain aura of gaiety, for I read and took down a very jolly death notice, that of "Madame War," dated November 11, 1918. It concluded with the words:

The Families Death, Disease, Illness, Devastation
have the great pleasure of informing you
of the long awaited loss which they have
just suffered in the person of
MADAME WAR

A thousand times alas! The old lady was not dead at all, but merely playing possum. She recovered, returned in 1940, and came again in 1944, utterly wrecking the château on the latter occasion. It is now a labyrinth of scarred and towering walls that reach for heaven. But the castle's verdant terraces still offer the same incomparable view. That the bombs and artillery of the Rundstedt Thing could not obliterate.

Victor Hugo was an exile in Vianden in the dark years of 1820 and 1871. His house, on the bank of the Our, was a prewar museum, but it is now a bomb wreck and its contents have been rifled.

Clervaux's Connection with FDR

Clervaux, almost at the "stem" of the pear-shaped Grand Duchy, is proud of its connection with Franklin Delano Roosevelt by way of the Delano component of his ancestry.

A noble family of this village bore the name of De Lannoy. A member of another branch of the family, Philip de Lannoy, or De La Noye, was born in 1602 and sailed from Holland to the New World in 1621 on the ship *Fortune*. He landed at Plymouth, Massachusetts, to join the colony established the previous year. The second generation changed the spelling of the name to Delano. Sara Delano Roosevelt, and hence her son Franklin,

* See "The Grand Duchy of Luxembourg" by Maynard Owen Williams, NATIONAL GEOGRAPHIC MAGAZINE, November 1934.



A roadside picture may "blow up" tiny Luxembourg for touring visitors.

The map above is from a Luxembourg guidebook. It is based on a map of 1938, which was reduced to 1940 by the Nazi occupation. The area shown is about 1,000 square miles, about four times the size of Rhode Island.

With the disappearance of Philippe II in 1304, the Counts of Luxembourg became the most powerful family in Europe, until the Swiss defeated them at the Battle of Morat in 1476, which ended their power. The Nazis desecrated Clervaux, more than any other Luxembourg town, during the days of their brief and last occupancy. The tall towers of the Benedictine abbey that dominates a lofty ridge between Clervaux like a giant snowplow going to the sea.

For forty years this abbey has seemed to stand like a banner of heaven over the village, but inhuman, venerable tradition, and even a

respect reverence for the abbey's architecture have been扫除叫嚣 by the Nazi troops. The round Romanesque windows were cut square to make it a Hitler factory of brutality. The abbey church was used, and abused, as a garage.

Tourists who have been impaled in the long, steep steps in bikes and buggies to enter the church at the main portal will be impressed at the way a user-friendly doorway was one of the interior.

The Allied bombardment, I suppose, did this in driving out Von Rundstedt.

"But no, traitor," said the geo-former.



Willing Hands Help Plucky Luxembourg Survivor of Invasions to Rise Again

FOR nearly three centuries the little country of Luxembourg has been invaded by the greatest powers. Without let or hindrance, however, it has survived the invasions of France, Germany, and Holland. The last of these, which has now been completed

by the Nazis, is no better. "The Boches did the same," said a burly Luxembourg peasant.

"They never expected, either the Germans or I, of this damage at first. In using it as a shield."

Absolutely, sir. Not one bomb ever hit us. The Nazis did it to show their contempt for human life. And when they were given out-of-date damage figures, it was still higher.

The town of Echternach, halfway down the great ridge, was subjected to a heavy bombardment and reduced to a shell of the city of the past. It was gutted and completely buried in thick smoke and dust. But the old town of the future still lives.

On an old monument commemorating events in the War of the Peasants, 1528, during the

period when Napoleon swept Luxembourg into his empire and entered the town, I read a name in the Latin script. I could not make it out. It was like "Ferdinand" or "Ferdinando."

There had once been a man named Ferdinand. In the word "FERNAND" I found the name of Sherlock Holmes detective. I assumed that it had been "Ferdinand's" name. There were exactly seven strokes left for the name "Ferdinand." But the word "Ferdinand" required eight strokes.

I should not be surprised if, upon my next visit to Luxembourg, I should find both the last word and its preceding word replaced by the name of this freed-in-loving land itself—that the man to whom we shall speak FIR WITH A K—will receive

Cloud Gardens in the Tetons

By FRANK AND JOHN CRAIGHEAD

With Illustrations from Photographs by the Authors

FROM winter over warm winds and hot tropical forests, we had returned to Wyoming—to the Jackson Hole valley and canyon roads of snow, to a dazzling whiteness scarcely toned down by forest green, to slightly subfreezing temperatures.* Our wives, Margaret and Esther, had waited for us in a big cabin on the Snake River.

Now we were packing our gear in to snow-buried cabins of the X-X Ranch, owned by "Uncle Jim," a homesteader who had arrived in this part of the country in the midst of a snowstorm, with \$17.50 his total capital. The four of us waddled in with a load at a time.

Taking off our packs, we read the sign on the door. "If I'm not at home, I'm off fishing. If I don't come back, see if you can make a living off the place."

Old Jimmy was home, however, and welcomed us with a dinner of elk steak, fried potatoes, potatoes, muffins, coffee, and the remark, "Come and get it!"

Wilderness Fun Even in Winter

During the following weeks the spring sun slugged it out with gray snow flurries that snared down the canyons of the Tetons and attempted to spread over the valley.

Although looking forward to spring, we were not anxious to see winter go. There were skins and ice fishing. There were wonderful light snows for tracking mink and marten, or for reading the story of beavers at work.

The deep snow blanket slowed down the gaunt moose and elk so that we could overtake and photograph them from snowshoes. On one such chase Frank pressed a cow moose and her yearling too close and went up an aspen tree as she turned and charged him.

Days of fly-fishing from snowshoes, when we froze the trout beside us as fast as we pulled them in, passed all too quickly. As if by magic a hot sun burned the snow blanket until the tops of the fences showed, then the tips of the sagebrush.

Warm winds whipped away the evaporation moisture, while the porous glacial soil absorbed the melted snow and slowly released it to the Snake River. Almost overnight spring had come to the valley, and winter slowly receded up the mountains.

Buttercups turned the first bare ground to a glistening gold. Shaggy, tattered tufts dragged out of the Snake River willow bot-

toms, waded into the unfrozen beaver ponds, and dally grew warmer as they gained strength and flesh from the slimy green algae.

Grouse drummed in courtship day and night. Seldom glimpsed, Wilson's snipe performed their evening nuptial flights, their directionless, wing-fluttering whistles seeming to come from dead trees in the swamp, from steepled spruce trees, from the dusky sky directly above, or from low in the edge-beet channels leading to the beaver houses.

A lonesome saw-whet owl calling vainly and monotonously for a mate, the hoots of nesting great horned owls, the ripples left by rising trout, aspens turning green and willows red—all said that winter snows had retreated for another short half year. A house to summer cabins on the SJS Ranch, owned by two naturalists, the Morris brothers, flared up within sight and sound of this and much more.

With the appearance of the first buttercups, John and I checked our camera equipment, got together dinner presses and vasculum, and, with permission from Grand Teton National Park officials, prepared to photograph the alpine flowers (map, page 813).

Snow still lay deep in the mountains, the flowers dormant beneath it. However, we could start photographing mountain climbing flowers such as the buttercup glacier lily, and spring beauty that bloom first in the valley, then follow the receding snows up to timber line. There were also valley flowers, the earliest bluebells and larkspurs.

Supplies Must Be Light

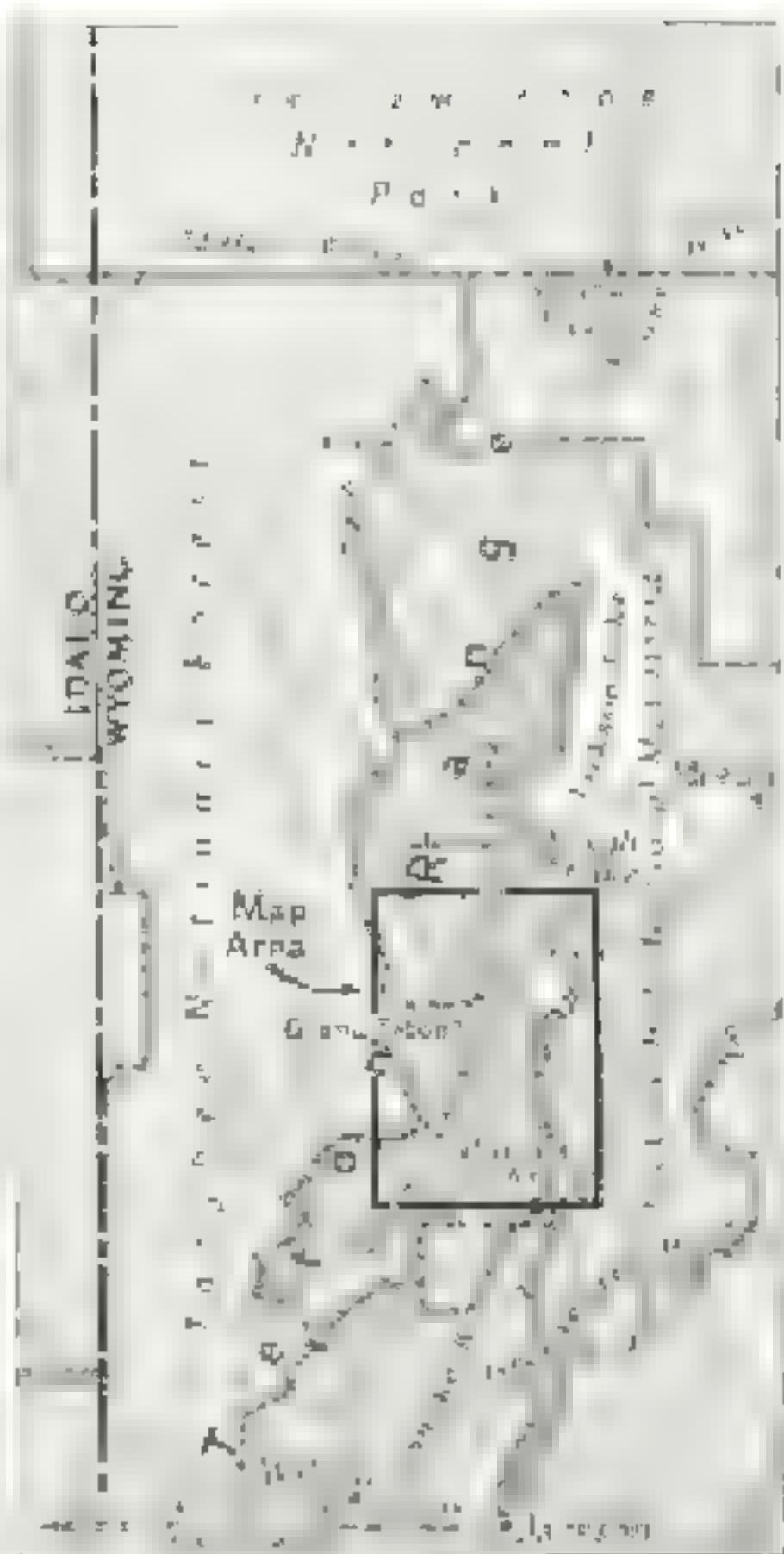
To back-pack up to the alpine regions we had to select a minimum of equipment, with emphasis on lightness and utility. We started with the food. In a smoke pack open to the sun we placed salted strips of beef. The combined action of sun and aspen smoke

* Frank and John Craighead wrote for the National Geographic Magazine their experiences as young birdwatchers hunting and raising wild birds. "In the Wild Tetons," July, 1937, and "In Quest of the Golden Eagle," May, 1939. Through the first story they received an invitation to visit a royal Galloway-sheep in India, and the story of their experiences, "Life with an Indian Prince," appeared in "National Geographic Magazine" for February 1940. Their Navy service is recounted in "We Survived the Coral Atoll," January, 1945. Graduatees of Penn State College, they are at present working on their Ph.D. degrees at the University of Michigan.



Braced on the Edge of Eternity, Frank Craighead Collects a Rare and Lonely Alpine Flower

Frank Craighead, a noted botanist, has collected over 100,000 species of plants in the Americas, and has written 100 books on them. His work has been published in many countries.



Map U. S. Geological Survey

From Lefty, Mountain Climbs the Clouds—Reaches a Wild, Primal World

In early spring and summer expeditions they explored the central section of Grand Teton National Park. In its 150 square miles of rugged mountain ground, the park includes the highest peaks of the saw-toothed Teton Range. To trace this majestic range, elemental forces in recent glacial times leaved and looks a great path black, Ice Age carvers, carving alpine peaks and gouging deep canyons bared the continent's most jagged skyline. Headwaters of the Snake River excavated nearby valleys. Puffy clouds on the plateau mark the old pack trails, the expedition's camps were temporary.

profused jerky, tasty dried meat now greatly reduced in weight and volume (Plate III). Hard and tough as chips of wood, it was stored in cloth bags. Fish were likewise salved and dried to the brittleness of crackers.

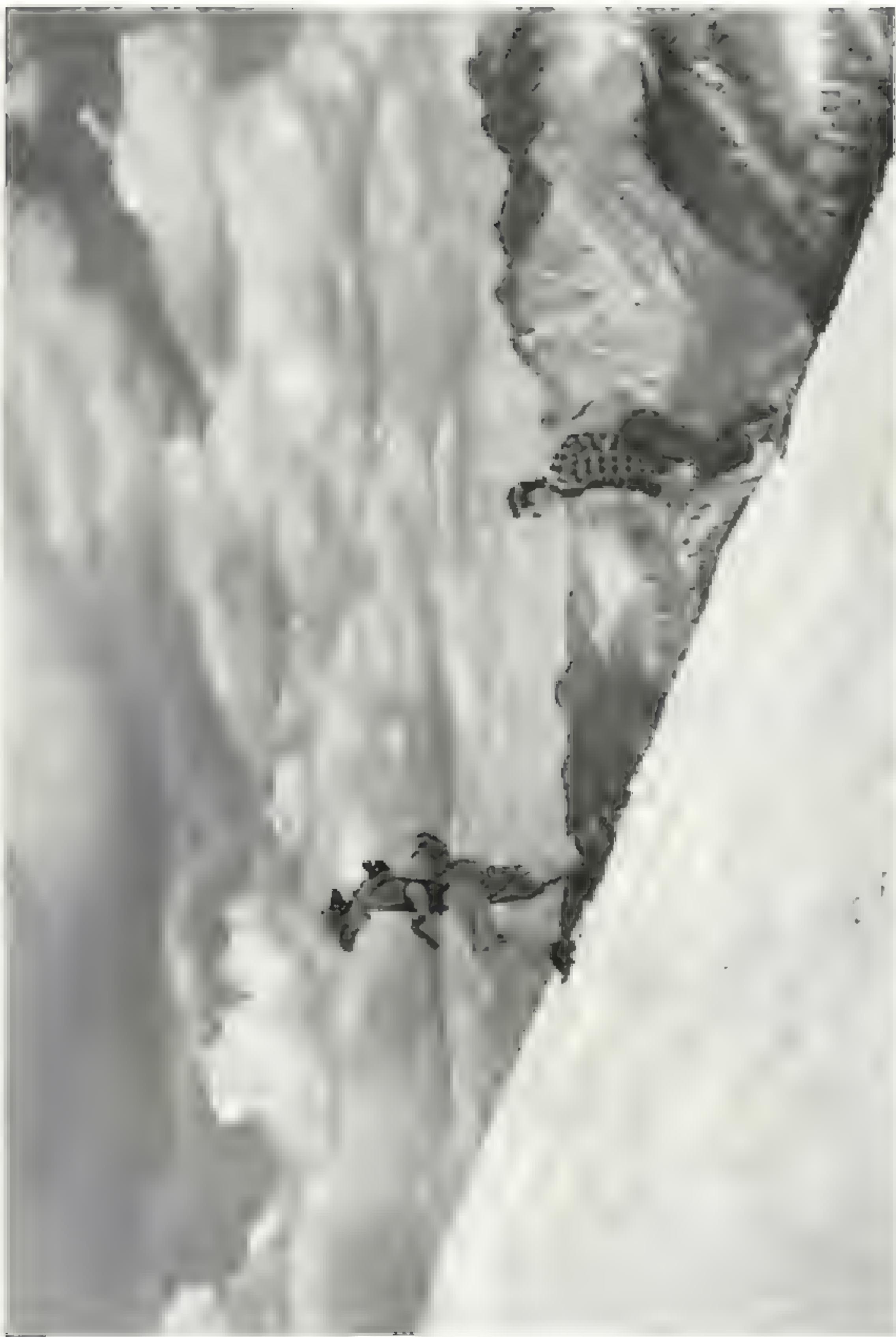
Corn and wheat were parched, dried foods such as peas, potatoes, soups, milk, prunes, and raisins were purchased, as well as rice, flour, noodles, and corn meal. Concentrated quick energy foods like sugar, honey, nuts, chocolate, and peanut butter were added.

When the bulk and weight of our load could no longer be reduced, we turned to other items. Our tent, a light waterproof nylon tarp, did extra duty as a pack. Rigged with removable chest and shoulder straps as well as rumpine, it functioned as efficiently as a pack board. The nylon rope of the pack rigging would also serve for pitching our tarp tent (page 628).

A mulete instead of an ox, a half-size flower press, 35-mm. cameras, light metal tripod, thin aluminum cooking utensils—all lowered the ounces that grew to pounds as, one after another, items of equipment were added or discarded on a basis of weight.

When joined by our friend Dave Spencer and Bob Patterson, and Bob's wife Hazel, we started on our first trip. It is an unwritten law of the mountains that those who venture into them on foot must carry their own gear. Wives are no exceptions. Thus the girls were carrying packs as large as ours but not as heavy, the difference being due to additional food we had offered to carry for them.

From the sage brush of the valley we followed the trail over glacial moraines choked in lodepole pine, and climbed gradually up Cascade Canyon into the subalpine zone of



Sixty-fourth in Series. [—] and Pictures on Drawing in The Work Table, Given for Le Petit's Price. March





When Camp Life Was Streamlined, Waves Assured Family Privacy.

It was a first-class campsite, with a flat floor, a high, sheltered bank, and a good view of the surrounding country. The only trouble was that there was no water.

Brave spruce. We had to go down the trail and walk and wade through snowdrifts, purple snow, and patches of mud, now partly dry among the rocks.

Bigger than any snowbank, but the packed snow of an avalanche that had plunged down the exposed southern wall and swept across the frozen floor, carrying with it tons of rock, as well as the scattered, mingled remains of snow and ice.

Later we trudged through the snow and found Lake Sustukah, which was covered in ice, the shore line covered by a foot of snow (Plate II).

Inside this glaciated lake at the head of the canyon we made our new camp. We pitched our tents on a small grassy site free of snow banks, at the bottom of the south side of the granite boulder. The boulder served as a wall back of us as a reflector for our fire.

The only water, though in the snow, and still being given off from the granite boulders, was at night, in late evening, when the ground defrosted. Our fire went down the last big branch of a tree, and the flames that represented you will have a patient growth.

The Old Question: Who Cooks?

Camp-pitard, we were ready to eat. A real cook under ordinary conditions was a奢侈品, so the men took turns at the cook work where feeder streams entered the lake. It was important, we felt, to stretch our food supply by catching trout—catching them in the lake. But when we were engaged in cooking supper, outdoor cooking is a man's job, and we intended to do our own—when it didn't interfere with a large meal.

The next day our men showed us that they, too, intended to fish even if it interfered



A Warm Smile Relies the Ice Coldness of Her Mountain Font Bath

Mary Evans, of Denver, Colorado, had been cold water and snow as she bathes amid ice in a frozen mountain lake in the Tetons, Wyoming, last Saturday to the tune of 100 degrees below zero. Mary is the daughter of Mr. and Mrs. W. C. Evans, of Denver.

With a smile on her face, Mary bathed in a frozen lake. In late afternoon, just when the surface water had warmed sufficiently for the trout to feed, the girls took our only two fly rods and headed for the open inlet. Just too late, we returned from photographing with the same purpose in mind. The tables turned, we started preparing supper.

Campers who don't cook their own meals must eat the concoctions of companions. Every camper seems to have a favorite goulash that is like ambrosia to his whetted appetite but tastes just as it looks to everyone else. Bill's was so-called rice pudding: sticky unashed rice, raisins, and prunes.

At the first helping the girls regretted having left the cooking to us. To prove the mess was edible, we continued to consume one helping after another long after the girls had called quits. In the morning there was no argument when we picked up the rods.

For breakfast we had the most delicious trout that had passed more than half the day beneath the cold lake ice. We and snow.

Breakfast over at 8 o'clock there was a brief repast of coffee. Tea with butter to heighten wolly heads of the long, thin stemmed bistorts. The fringed grass-of-Parnassus stood upright and neither.

The light was bright, the shadows soft. It was the time of day when we set up our cameras, took a picture, and moved from one lower to another. Alone with the heat of the day came the winds, persistent breeze that would blow away, cease for an instant then suddenly start up stronger than before, making photography difficult.

Nevertheless, our list of photographed flowers grew—glabeflower, glacier lily (or alpine tongue—late V), marsh bellflower, Smelowskia, Potentilla, white mountain heather (not a real heather, despite its name).

shooting star, phlox, Potentilla, and erigerons. Our flower press exploded so that none of us wanted to pack it down the mountain (page 826).

For I day took us over miles of mountain meadows, up the peaks to the farthest penetration of seed plant growth, and often on to the summit for the fun of it. Sometimes together, at other times widely separated, we crossed the talus slopes, climbed the snow fields and glissaded down them, explored cliffs, ledges, and chimney's for new flowers to collect and to photograph.

Our legs no longer complained of the day's exertion; our lungs adjusted to the rarer atmosphere. We felt like staying forever up in the clouds, in the invigorating air, in the rock gardens above the valley.

As our appetites increased, our food supply dwindled. We supplemented it with fish, mountain sorrel greens, and the green pods of glacier lilies, but the inevitable faced us. We must temporarily leave the cloud gardens and descend to the valley for more food, more film, and a fresh start.

Back to the Peaks in August

In August we were again in the mountains, camped this time near the head of the South Fork of Cascade Canyon, where two streams originating in snow fields above us formed a V on joining.

We were at timber line, and above us towered a tremendous limestone wall the stratified structure of which contrasted with the Pre-Cambrian granite of the Teton peaks. Beyond it lay picturesque Alaska Basin, tucked away in the Targhee National Forest. This calcareous soil would support flowers we had not yet found and photographed.

Above the cliffs and peaks birds of prey soared and wheeled in rising air, curred while hunting the treeless flower meadows below. Swainson's hawks, ferruginous rough-legs, sparrow hawks and prairie falcons maneuvered apparently unhampered in the rarefied air at 11,000 feet, while the golden eagle soared to 15,000 feet above to look down on the peaks of the entire range.

Cliff swallows and rosy finches nested on cliff faces and in crevices above timber line. Lower down, pipits and white-crowned sparrows were hatching their young in the sprawling thinned fir growth. In the rock slides, coulees or talus, were harvesting flowers, piling and curing them in colorful scented "haystacks."

A hot, dry spell had brought the alpine flowers to the height of their blooming season several weeks early. The dryness was likewise

rushing to a close their already short lives. Fields of golden mountain sunflowers, lavender erigerons, yellow, pink, and scarlet paint-brushes, dark-blue lupines, sweet vetches, mountain roses, stonecrops, various colored thistles and astromones seemed to be racing frantically to bower and produce seeds.

This rush and hurry proved contagious. We were forced to fall into the swing in order to photograph the numerous flower species while their brief glory lasted.

As we took up the challenge and entered the race, camp life was streamlined. Dave would perhaps start a fire the girls would cook breakfast and portion out food for lunches (page 816).

John would take advantage of the early-morning sun to photograph a flower. Bob would secure the tents and protect our gear from possible storms. We'd then eat a breakfast built around cupsfuls of oatmeal or cornmeal mush and be off, sometimes to locate new flowers, sometimes to hurry to a previously located bower, timing our arrival to coincide with the best light conditions.

In the evenings we would drop down from the peaks, the ridges, and the high saddles to our timber-line home. Sometimes we would skip the snow fields on our feet or angle down the steep, rocky talus slopes in long bounds. All of us returned hungry and tired.

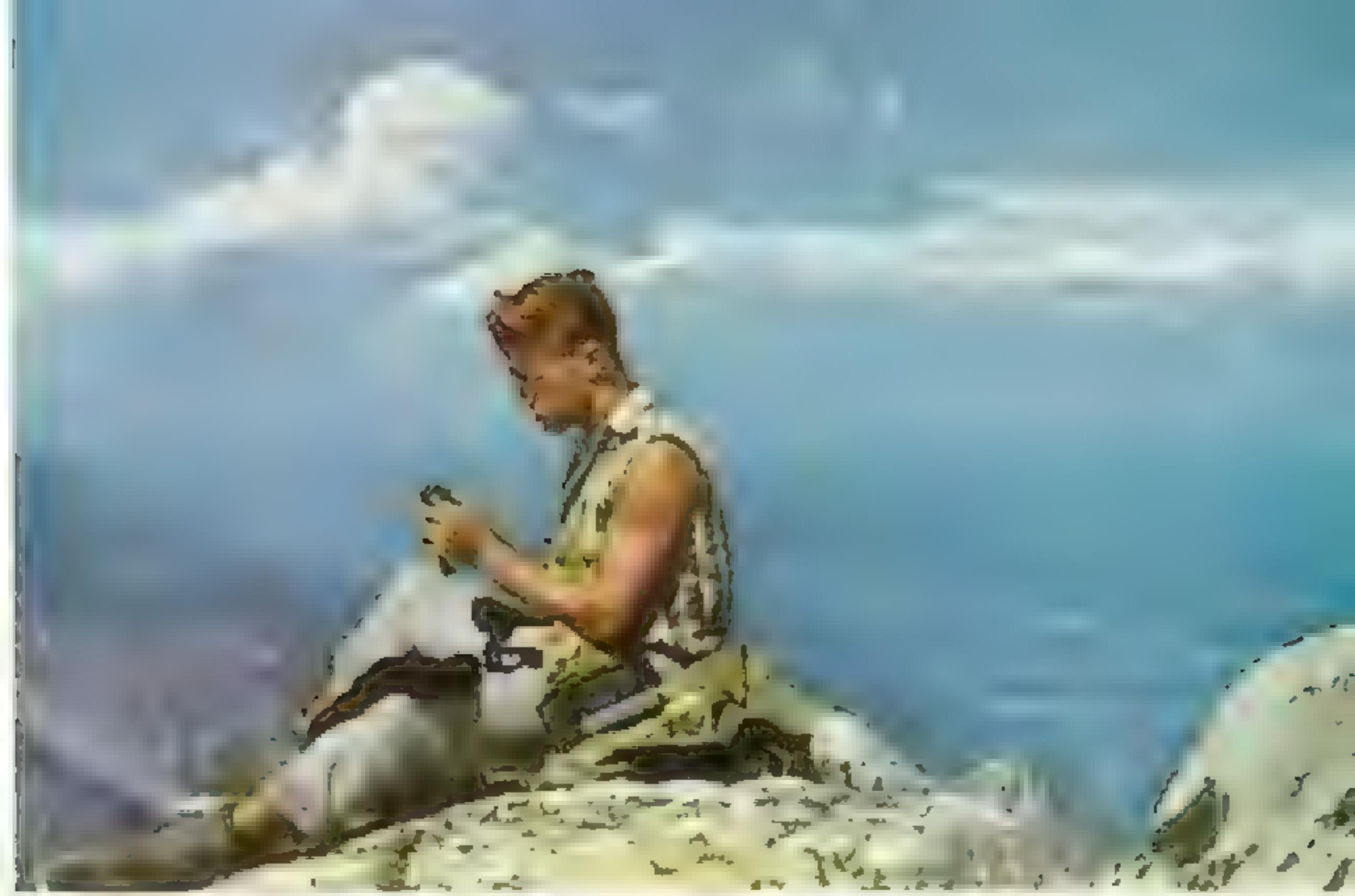
While supper was cooking, we pressed our flowers and keyed out strange or doubtful species in our books. Sometimes we finished writing notes by firelight. Each evening we would add to our list the new plants photographed. On days when weather conditions were poor, we would chalk up only two or three; on our most successful day John and Margaret photographed 30 different species.

Thrilling Quest of Purple Saxifrage

While Dave and Frank keyed plants and wrote notes at camp John, Margaret and Bob started off for Alaska Basin, photographing each new plant they encountered. They hoped to find on the high, rocky ridge the small purple saxifrage, *Saxifraga oppositifolia*. The day before Dave and Frank had covered 20 miles of high ridges and slopes, looking for it with no success.

This tiny alpine flower was of special interest, because it not only perches high on the mountain slopes of the Rockies but is found in similar habitats in the Alps and the mountains of northern Europe and Asia. As an old friend, this hardy adventurer greets the mountain lover on the Grand Teton and on the Matterhorn.

John, Bob, and Margaret dropped down



Tetons in the Distance

Bellowing Clouds over the Tetons Herald a Storm's Approach

Clouds roll in from the south, obscuring the Tetons. The clouds are dark and heavy, suggesting a storm is approaching. The foreground is filled with rocks and low-lying vegetation.

Autumn Panorama and Beaming Grizzlies Invade a Glacier's Rest

Autumn colors are vibrant in the foreground, while a large grizzly bear is visible in the background.





Glass 1188, First to the Spring, Ned Denarely Beside Lake Saldana



21

Sun and Aspen Smoke Turn Perfectly Bassett Ranch Valley

The sun was low and the smoke from the burning grasses and brush was thick. The birds were singing and the air was filled with the sound of the wind.

Three Little Men Work with the Hand Proverb Surface

The three little men worked hard to make the surface smooth. They used their hands to smooth the surface.





Color Coders from Nature's Palette Brighten a Hard Environment

By ROBERT L. HEDGES, JR., and JAMES R. COOPER, JR., Department of Biological Sciences, University of North Carolina at Charlotte, Charlotte, North Carolina 28223

Editor's Choice: Red Monkey Flowers Grow Peschka in Bronx Stream

Photograph by ROBERT L. HEDGES, JR., Department of Biological Sciences, University of North Carolina at Charlotte, Charlotte, North Carolina 28223



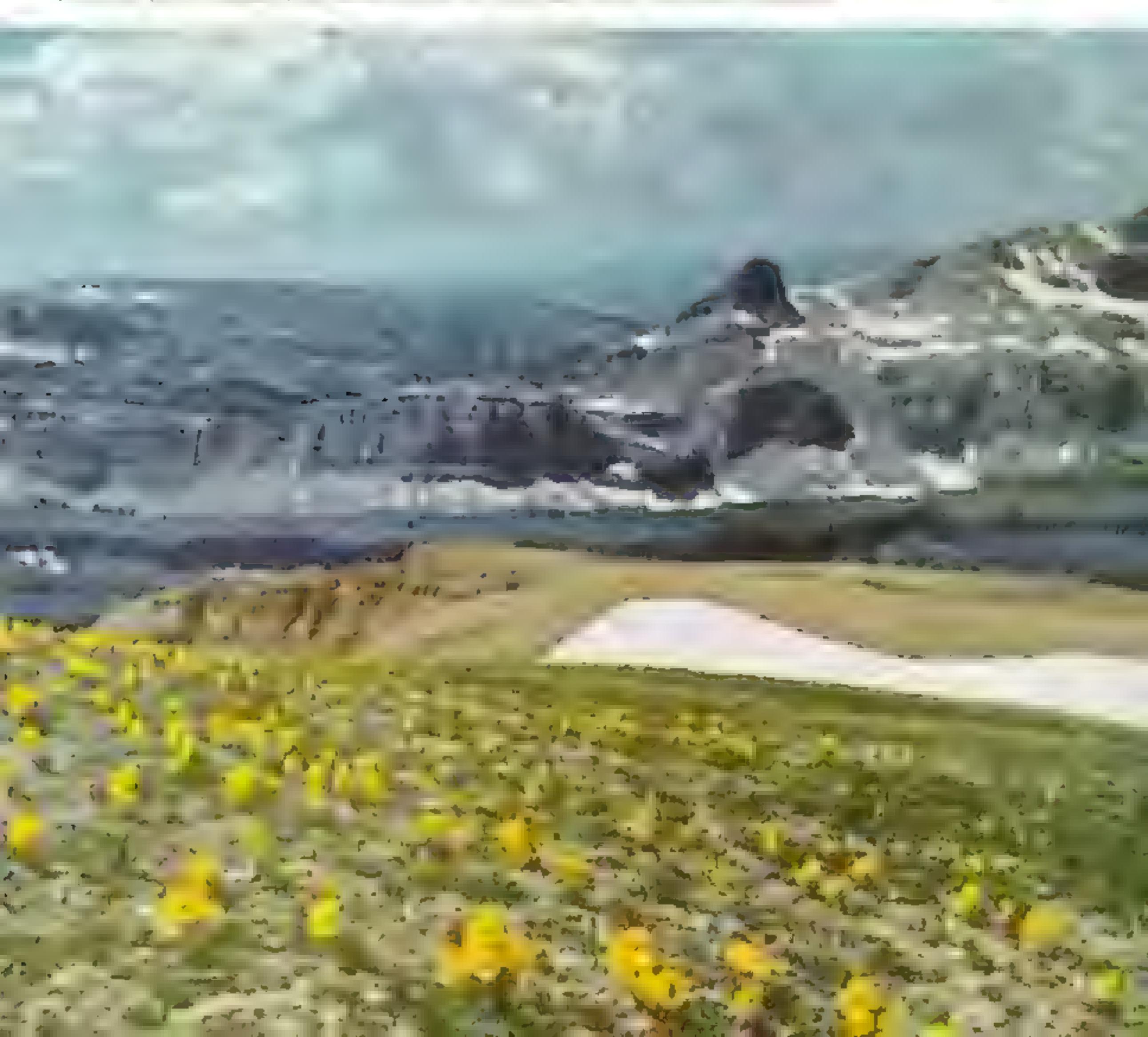


Fluffy Flowers of the Ternstroemia and Bloom Quickly

These flowers are very small, but they grow in great numbers. They are yellowish-green and have a fuzzy texture. They bloom quickly and last for a short time.

Spiny Berthovers Thrive Higher Sticks on Mountain Firwood

These flowers are very small, but they grow in great numbers. They are yellowish-green and have a fuzzy texture. They bloom quickly and last for a short time.









Down He Goes! Frank Gannett's Dark Hours by a Slender Rope

He dashes down the face of a cliff, suspended by a single rope, to take his last look at the world he has left behind.

below timber line on the slopes that carried the mountain rain and melting snows out to the plains of Idaho. Opportunity had eluded them all morning, and at noon they decided to climb back to the ridge, then follow it south in their search.

A half hour of upward plodding, and they stopped to debate. A storm was rolling in from the southwest, and thunderstorms mixed with mountain peaks and ridges produce trouble. Should they risk entanglement in such a brawl?

The storm, they argued, might be deflected by a peak or pass through a canyon, missing them completely. Once on top, they could perhaps drop down the far side to shelter and be won on their way to camp. But where to go on climbing?

The onetime distant thunder was soon breaking directly overhead. Clouds rapidly dwarfed the view. Almost at the top they turned back. The air was charged, crackling. Lightning stood their hair on end, made their teeth grin. The wind came in violent gusts. Lightning struck close by, leaving a strong odor of the steel in its wake. They raced for timber line.

A band of elk crossed their path, likewise headed down. Again the lightning struck. John thought of temporarily abandoning his metal tripod and camera as a fooling boyed up his arm, but he could find no protection for it. Rain and hail pelted them as they crawled into timber line lean-tos, natural shelters beneath the thick matted roofing of studded trees.

It is in such places that mountain sheep and elk huddle down. Charred ageless, dwarfed trunks support a thick mat of foliage flattened and contoured to the mountain by prevailing winds and heavy snows. Streamlined to meet the blists of a century of storms, they took this one as they had all others. Rain and hail, like force spent on the cushion of needles, trickled down to the dry soil below.

Thundering and muttering, the storm moved quickly on, tagged by the sun reflected in a million water crystals adhering to the flowers. The scattered hat soon disappeared.

Elusive Flower at Crest of Ridge

Climbing again, the plant hunters made the ridge. On top they stopped to photograph a beautiful tiny member of the Mustard family, *Draba*. Its yellow blooms were still sparkling from the rain.

On the highest rise on the ridge, the top of the limestone wall, they saw, at last, the light-purple flowers of a single clump of *Oppositifolia*. The search was over.

John set up his camera, moved it as close as he could to the limberlost flowers, and took a picture. Margaret curled around the plants to shut off the wind.

Evening was at hand and camp was a long trek away, unless they could take a straight course, a short cut. The wall in front of them dropped 1,000 feet to the canyon floor. A long detour would take them down there, with yet another high saddle to climb before dropping into Cascade Canyon and camp.

But from a break in the precipice they could reach a wide, sloping, snow-covered ledge running horizontally across the lower cliff face. If they could follow this over to the saddle, they would hit a long, steep snow slide and could glide almost into camp. It was worth a look.

They climbed down to the ledge, following tracks of elk caught in the storm. At the ledge the elk had stopped, backtracked, and sought another route of descent.

Short Cut Proves Perilous

John, Margaret, and Bob hesitated. The ledge had a 50-meter snow slope. Without ropes and no ice ax it was dangerous. It was also shorter. One slip, a short slide, and they would drop over a cliff varying from 40 to 100 feet and land on a nearly perpendicular snow slope that ended in a mass of huge boulders.

John thought they could make it. Margaret and Bob were not sure. Another storm struck, sweeping over the wall from the west. They waited it out, huddled against the precipice for protection. When it passed, the canyons were in shadow. Only the peaks reflected the sun.

They decided to try the short cut—cross the ledge. John handed Margaret the tripod to use as an emergency ice ax. They moved slowly, kicking each foothold in the crusted snow slope.

The ledge was cut by deep crevices formed by water constantly freezing and expanding in confined cracks. Tremendous sections of it were false fronts of millions of tons of limestone rock pried loose from the mountain proper and getting ready to fall. They might cling another 50 years or fall tomorrow—tonight.

Margaret slipped, fell, dug the tripod in, and stopped. That was enough. John took chances, but he didn't like Margaret taking them—not when he had to watch.

They retreated, following their ice steps back, and descended a chimney to the snow field. Then they took off in a glissade that shot them downward, three blotted figures barely discernible amid sprays of snow.

Their eyes watered; their feet barely



Evening Brings the Job of Classifying and Pressing the Day's Flower Take.

The flower hunting is over now, with the last bunches having been gathered from the wild and lonely mountain passes, and the last of the plants have been gathered and dried. Now it is time to get the day's work done, and the flower collector's day is over. The first task is to lay out the day's work, and then to begin.



Ny in Tarp and Fresh-cut Fur Bouquets keep Sleepers Dry Top and Bottom.

After a night in the open, and the morning's long walk, the collector is glad to find his bed, his tarp, and his fur. The park ranger park has reached the tent, and the collector is about to sleep.

touched the snow. An icy lump would fling them off the surface 20 feet. A shift of a foot or three beats made the snow so brittle, strained leg muscles, but served as a brake. A turn of the toes started them on a slavering or glued them to either side of an ice rib.

A second on the snow saved minutes climbing over rock. They were off the cliff, they were safe on the canyon floor but it was not the camp canyon. A third climb up and over the saddle, a long hike down to the mud, and they were home again tired, but gay. But happy. Opportunity had been added to the ist.

A Sure Cure for Wart-tout Nerves

The campers were only for fun—just a can of peasoup, a ham hock, and a batch of biscuits, all baked in a low oven.

Dave ate the dried potatoes and slumped them with dried milk. Esther cooked the soaked prunes we were saving for breakfast and put out bacon and peanut butter for the biscuits. Fragrance of coffee permeated the air. John, Margaret, and Bob dug into the meal, and the others slept on with them.

The kettles boiled and our hunger satisfied, we sprawled contentedly around the fire, leisurely sipping coffee. Bob broke the evening silence: "How could this be better?" John answered: "It couldn't."

Dave was silent, but his eyes agreed.

They meant all that made up this way of living—this fulfillment of long-cherished hopes. They were thankful for the food and quiet, for the surroundings that had



Ice Ax and Bare Hands Help Climb a Snowfield's Steep Ascent

High in Casper Canyon in the Tetons, a medium John and Margaret and Head hit snow that the head picked through an aviator hat. After the melting whiteness of the snow had been washed away, the two men in stuffy Law Substitute shirts and shorts were sweating. At day's end they planned to go to bed.

preserved for us and for all Americans who come to visit them.

Old time thoughts were rest visible for our public land system of parks and forests. We have looked across our campfire and seen the summer in this environment had erased the war lines in Bob's face, the tired look in his eyes, they would have felt repaid. More than four years' duty on a destroyer from Pearl Harbor to the Philippines Sea were being forgotten. Dave's gaunt face was still. The strain of flying was gone. He was again a must as we had remembered him.

Lightning was playing among the peaks; the storms that had been rolling around all day



A Dwindling Glacier Hints at the Bulldozing Power That Carved the Tetons

The remains of the great ice field rock-cut by which it pushed forward in its prime. During earlier geological ages the ice covered the central outlines of the Tetons Range. Much of the range is still under ice, and the high peaks are in the middle stages of degeneration. Located in these mountain habitats are the most important glacial features of the Tetons National Park.

seemed to have fused at last in one tumultuous mass of clouds and searing flames. A brief stillness settled around us; the whitewash pines stopped whispering, and we could hear the trickling of the stream.

In full accord we rose simultaneously, checked tent ropes, threw a handful of dry kindling under a tent, piled rocks on cooking utensils, placed cameras and film in water proof bags, and crawled into our shelters just as the wind zoomed over the wall with a roar and dashed down into the canyon, driving the rain with it.

We were in a huge rock bowl with the wind as a mixer. It seemed to tear the earth, beatning, thunder, rocks, trees, the tents and ourselves, mix them thoroughly, and whell the contents off into a darkness vibration with thousands of discordant, dementing sounds.

The storm's fury was so awe-inspiring that we lost track of time, date, and direction and

were surprised, as the onslaught slackened, to see that we were still under a tent, in the hills, but with our rolled-up beds and equipment relatively dry.

The next morning light snow covered the peaks and clouds filled the canyons. They drifted low over the alpine patches. They let the sun through here and there, but never for long. The mood of the mountain had changed. Water was in the soil, moisture in the air. The plants responded. Their blossoming season had been lengthened. For a few days more they would color the landscape.

Later the snow had started down the mountain. It would descend to the valley below, where just as inexorably as it had descended, leaving spring behind. The flowers in the alpine flowers would lie dormant for three months, awaiting the time when they would again enrich the mountain with their color and life.

Mapping the Nation's Breadbasket

By FREDERICK SIMRICH

IT WAS June. Flying west over Lake Michigan—so far out that the land skies, we saw Chicago's towers suddenly spike up from the blue water. It was as if from Queen Mary's rail, on some Atlantic crossing, you might behold a gleaming city lift itself from ocean's depths.

Seconds later we looked down on the elevated railroad circling the Loop, pounding heart of this transit city.

There was the 43-story Board of Trade Building—topped by the figure of Ceres, goddess of grain—where at 9:30 every morning a bell clangs to open the big grain market, shouting brokers buy and sell, and telegrams flash to distant farmers news of changing prices (page 834).

In another minute we were over sprawling Union Stock Yards, last last year to 6,650,000 cattle, horses, hogs, and sheep. To this world's greatest sales pen trains roll in from all over the Midwest, helping make Chicago the busiest railroad center ever known. In a whiz of it passenger trains run at the rate of one a minute, and every day some 45,000 freight cars hit its busy switches.

One of Earth's Great Producing Areas

On a map of the North Central United States, published with this issue of the *NATIONAL GEOGRAPHIC*,^{*} you can see how roads, highways, rivers, and canals link Chicago with such other busy Midwest cities as Cleveland, Indianapolis, Milwaukee, Minneapolis, St. Louis, Kansas City, Topeka, Lincoln, Omaha, Sioux Falls, and Des Moines (page 850).†

The map shows how, by the Mississippi River and connected inland waterways, cargoes of wheat ride from Minnesota down to the South, and southern oil or sugar goes upstream to Omaha or Minneapolis. In water-borne commerce with ports as far away as Houston, Texas, the Chicago Harbor District, using the canal that connects Lake Michigan with the Illinois River moves about as much freight as passes through the Panama Canal.

As for air mail and air travel, there's hardly a sizable town from Ohio west to North Dakota or from Wisconsin down to the Missouri Ozarks but has its airport or is in easy reach of one.

It takes these many means, planes, trucks, and barges to handle Midwest commerce because, mile for mile, State for State, no equalated on our planet yields such farm wealth. Its industrial wealth is also enormous.

Consider our Corn Belt alone (page 849). It reaches west from central Ohio, takes in most of Indiana and Illinois, parts of Missouri, nearly all of Iowa, and parts of Kansas, Nebraska, South Dakota, and Minnesota. This almost level area is more intensively cultivated than any other of its size in the entire Nation.

Where Tall Corn Turns to Meat

Nature made Iowa one big cornfield. Climate, depth and richness of potous soil, and quality of seed bring average yields of 50 or more bushels per acre, and record crops up to 150 bushels. This corn is mostly fed to stock and sold as meat.[‡]

With 93-percent literacy, Iowa is famed for excellence of schools, its experiments in finding new uses for farm products, and, notably, for the work of its State College at Ames in producing better pigs. It leads all States in corn, oats, hogs, and eggs.

In value of farm products, Iowa runs right and tuck with California; first one's ahead, then the other. Texas raises more cattle, but more are fattened in Iowa than in any other State.

Just you have only to look at costly farm machinery, fat, sleek stock, well-painted houses and barns, fine roads, and all the shiny automobiles to see what good country life this Corn Belt puts in reach of farmers who mix brains with sweat.

Nor does Iowa, or any other Midwest State, think only of plows, cows, pigs, hogs, and manure. Des Moines, for example, sometimes called America's farm capital is noted for its farm papers, for J. N. ("Ding") Darling's protect-the-wildlife cartoons in the *Register*, and for its share in making or selling some of the washing machines, fountain pens, cosmetics, farm implements, lawn mowers, vending machines, and railway equipment which Iowa produces.

* Members may obtain additional copies of the new map of the North Central United States and of all standard maps published by The Society by writing to the National Geographic Society, Washington 25, D. C. Price in United States and Possessions, 55¢ each, in paper; \$1 on linen. Index, 25¢. Outside United States and Possessions, 75¢ in paper; \$1.25 on linen; Index, 50¢. All remittances payable in U. S. funds. Postage extra.

† See "Iowa, Crossroads of the Continent," by John B. Wood, *NATIONAL GEOGRAPHIC MAGAZINE*, May, 1931.

‡ See "Iowa, Abiding Place of Plenty" by Leo A. Borah, *NATIONAL GEOGRAPHIC MAGAZINE*, August, 1931.



One Kind of "New Look" on Chicago's Wind-swept Michigan Avenue.

People like to buy coats that will fit them. In the Wind-swept States, however, people are used to buying coats that fit the wind.

However, on pavements such as the St. Louis State Fair or green lawns in Milwaukee and the like, the same coats could as well have been worn in Missouri or in Indiana, for instance.

Remembering his former partners at Midwest, you would see the Tex Willard Wood and Thomas Hart Benton Wood, who, however, with his partner, had stopped to go to a speaker in the spring in the country. I expect their grandpas or their now-faded memory of what he used to be and what people call the American Gothic. For a West Sister and a Cedar Ridge brother posed.

Benton, Jessie James, etc., and other couples in Missouri, were at Jefferson City the other day, and said they were very sorry indeed over the two schools of Missouri that never spoke.

During November, 1933, 125 miles west of the Missouri River, trees and shrubs, bell-trees, and cedar bushes, dried out and

met the Missouri River, beyond which lay the Great Plains.

Metropolis of the Nebraska Plains

The Nebraska metropolis is Omaha. The city especially in its lower-middle-class districts, its eager but restful day workers, on grain and soybean fields, on packing flour mills. If you do not like the meat the best, and the long plants there are olive oil and tea in the country, for growing from hedges, cookies and donuts like the old-time traps.

It is under 2000 feet the great forested center of Omaha, and up the hill to the station. Trans-siberian going, like a snake at the bottom of a trough. Horses strength for a horseman on a whitewashed lawn. The 4th floor, a wavy guitar player, etc. A little on the Range, it applied to a present Interstate division, the Missouri, the central state, the 11th, the 12th, the 13th, the 14th, Missouri, Mo-



Workers' Strike and Counter-Strike in Chicago's Building Contractors' Market

With such a large number of people involved in the project, it is important to have a clear understanding of the goals and objectives of the project, as well as the responsibilities and authority of each individual involved.

I plan on writing more reports like this. My
first one.

The creative faculty and their
own self-expression should be
the Major Point of interest in
the study of Art.

I went down to see the New England side of Mount Washington. I had a fine view from Mount Washington Hotel. It is well worth the trouble to get up there to see the snow on Mount Washington, near Randolph. It looks like a white mountain of amazing beauty.

End of Lakes, Picard River, Ontario

The 2500-ton iron Minnesota was to travel west through North and South Dakota, St. Paul to the west and return to east. There were two iron ore docks at Duluth, but the lake could not be crossed in the winter. The iron was to be sent to Minnesota land or to Japan. It is

center around the Adirondack and
the Midwest. It is located in the
West Southern prairie, along the lakes
and the shores of Lake Superior, the Mis-
issippi, the Great Lakes, the St. Lawrence,
the Red River, the Missouri, the
Kan River, the North and the
Arkansas and St. Lawrence, all in
Minnesota.

He has been a good boy all his life.
He had a good education and he
had a good job as a carpenter. He
had a good wife and two children.

The First United States Naval and Merchant
Marine Training Center, located at New Bedford,
Mass., South Coast, is to be established by the
United States Navy Department, as a Marine
Training Center.

What is the best way to approach the study of the Hebrew Bible? In this course, students will learn how to read the Hebrew Bible as a literary work, and how to interpret its meaning in the context of its historical and cultural background.



Carnegie-Illinois Steel Mill and Youngstown Sheet and Tube Works on Cuyahoga River



On Boats from Lake Superior Unload in Calumet River Part of the Illinois Waterway



Everything from Furniture to Books Is Displayed in Ghent's Nederlandse Mart

THE NETHERLANDS MARKET IN GHENT, BELGIUM, IS THE LARGEST IN THE COUNTRY. IT IS A FASCINATING PLACE TO VISIT, AND IT IS AN UNUSUAL EXPERIENCE TO WALK THROUGH ITS HALLS AND HALLS OF ANTIQUE FURNITURE, BOOKS, AND OTHER ITEMS. THE MARKET IS LOCATED IN THE CENTER OF GHENT, AND IT IS EASY TO REACH BY TRAIN OR BUS. THE MARKET IS OPEN DAILY, AND IT IS A POPULAR DESTINATION FOR BOTH LOCAL AND INTERNATIONAL TRAVELERS.

THE MARKET IS LOCATED IN THE CENTER OF GHENT, BELGIUM, AND IT IS A POPULAR DESTINATION FOR BOTH LOCAL AND INTERNATIONAL TRAVELERS.

THE MARKET IS LOCATED IN THE CENTER OF GHENT, BELGIUM, AND IT IS A POPULAR DESTINATION FOR BOTH LOCAL AND INTERNATIONAL TRAVELERS.

THE MARKET IS LOCATED IN THE CENTER OF GHENT, BELGIUM, AND IT IS A POPULAR DESTINATION FOR BOTH LOCAL AND INTERNATIONAL TRAVELERS.

THE MARKET IS LOCATED IN THE CENTER OF GHENT, BELGIUM, AND IT IS A POPULAR DESTINATION FOR BOTH LOCAL AND INTERNATIONAL TRAVELERS.

THE MARKET IS LOCATED IN THE CENTER OF GHENT, BELGIUM, AND IT IS A POPULAR DESTINATION FOR BOTH LOCAL AND INTERNATIONAL TRAVELERS.

Superior, stands near the point where John Jacob Astor built a fur-trade post in 1817.*

Though far off beaten tracks of cross-continent trippers, Duluth-Superior Harbor ranks second among United States ports in total domestic and foreign water-borne commerce, being surpassed only by New York. About 7,000 vessels of all kinds arrive and depart each season.

Hills of Rust-red Ore

More than 60 percent of the iron ore mined in the United States comes from the Mesabi, Cuyuna, and Vermilion Ranges of Minnesota and goes by ore boat to steel mills about Chicago and elsewhere.† In one busy year the Lake Superior district shipped more than 92,000,000 tons!

Wheat, too, leaves this harbor in oceanic volume; 25 grain elevators can hold 50,000,000 bushels. At 20 bushels an acre, that's the crop from a field of some 2,500,000 acres!

What may happen to freight trade from "the head of the Lakes" to Buffalo if and when the St. Lawrence Seaway Project is completed is a subject now of much debate in all those Lakes cities.

Just now, it's interesting to imagine ships docking here from South America, or even from China, and passengers for Antwerp or Capetown waving farewell from a liner's rail as she edges away from a wharf, say, in Milwaukee or in Fort Arthur, Ontario!

Though even few people in Chicago seem to know it, several small ocean-going freighters of Swedish-American and three other lines already use the St. Lawrence between the Windy City and North Sea ports. They bring us wood pulp, canned fish, herring, cod-liver oil, and tulip bulbs, and take back meal flour, and farm implements.

Many Islands and Scandinavian Names

All this Minnesota and Dakota country suggests Scandinavia, home at all the islands, and the Danish, Norwegian, and Swedish names in telephone books!

Likewise in Wisconsin, as in St. Louis, Cincinnati, and other Midwest "island islands," German names abound. Many early orchestras, athletic and glee clubs, learned societies, and newspapers were founded by German immigrants. But it was the French who came earliest.

Father Marquette and Joliet were the first whites to land at what now is Chicago. For years St. Louis was strictly a French settlement; the French left other place names, such as De Pere, Iow Clift, Ste. Genevieve, but they faded from the Midwest as permanent

settlers. What might be filling this Breadbasket today had pioneer French remained to rule the Mississippi Valley?

After the French and Indian War, the Revolution, and the War of 1812, migrant American tides rose and flowed through Cumberland Gap, down the Ohio, up the Wabash, the Illinois, the Missouri, as in the days of Daniel Boone, Simon Kenton, and the fur trappers. So many from Virginia settled in southern Indiana and parts of Missouri that to this day these sections have a distinct flavor of southern speech, culture, and social behavior.

Italians, Irish, Italians, Greeks—by hundreds of thousands they too now flavor the Midwest melting pot. But few take to the land; the mines and the great industrial centers chiefly absorb them. Even the oil fields of Indiana, Illinois, and Kansas are worked mostly by Americans of Anglo-Saxon origin.

The Yield of Wisconsin

What a pile of good things to eat Wisconsin dumps into our Breadbasket!‡ Besides grain, it adds butter, cheese, milk, potatoes, sugar beets, peas, maple syrup, cherries, cranberries, apples, and plums. It ranks high in growing dairy cattle and yields hemp and cigar-wrapper tobacco.

Tractors, farm machinery, footwear, textiles, sawmills, motor-vehicle parts—Wisconsin makes them all.

Big paper mills abound. In the State are such factory centers as Milwaukee, with the great Allis-Chalmers plant; also Racine, Kenosha, Janesville, Beloit, and Madison with its famous laboratory for the study of wood and wood products.

With 85,000 miles of highways and 7,000 miles of railway, Wisconsin's scenic regions, similar to Minnesota's, are reached by hordes of summer guests.

At railway terminals in all these bigger Midwest cities you see sleek, swanky new Diesel-electric locomotives lined up side by side, painted like circus wagons. There they stand, as passengers climb aboard the stream-lined aluminum-and-steel coaches, ready to whisk visitors the Breadbasket or race on to New York, New Orleans, or the Pacific coast.

* See "The Romance of American Ports" by Wanda Burckhardt, *NATIONAL GEOGRAPHIC MAGAZINE*, March, 1942.

† See "Steel Master of These Adj." by Albert W. Atwood, *NATIONAL GEOGRAPHIC MAGAZINE*, April, 1947.

‡ See "On Goes Wisconsin," by Charles Smith, *NATIONAL GEOGRAPHIC MAGAZINE*, July, 1941; "Deep in the Heart of 'Switzerland,'" by William H. Nichols, *JUNE*, 1947.

Fig. 12. Two 100 nm diameter spherical particles of Fe_3O_4 dispersed in a polyacrylate gel matrix. The particles are surrounded by a thin layer of polyacrylate. The particles are approximately 100 nm in diameter.



Photo by Mark Johnson/Schlesinger Photo Co. Inc. © 1986 Schlesinger Photo Co. Inc.





A group of Squatting Boys and Girls Hold Sullie Front a Cowboy and Princess.

In Winnipeg, Manitoba, the children have built a fort of logs and sticks, and here they play at being cowboys and Indians. They have a "cowboy" and a "princess" who are the leaders of their gang.

What first made Canada Rock Hewn? Four Houses of Parliament, Major Chief, Capitol Limited, City of San Francisco Bayre Builder, Twentieth Century Limited, Broadway Limited, Player Limited.

As black and yellow centipedes they live across the Great Plains and storm the country. The Cowboys tell us that on still nights you will hear a stampede of these off-road devils.

Now, in new type foundry you are built by General Motors at its plant in La Grange, Illinois, near Chicago, you come "wunched."

No man-made land animal has such power. The new "Lion" electric car, which can run fast, it could haul more, were it not for the wind and the rain. It is two. More than 5,000 of these giants are now in use.

For the new Locomotives turn out the power of five miles; a "unit" is a single

car. At 100 miles an hour each unit makes 100,000 horsepower, and the total 500,000.

A 100-ton freight train locomotive costs \$10,000. The engineer only knows how long he will last—say 10 years.

Many cars are built from the latest scientific knowledge. The most recent addition to the Ford Motor Company has got 1,750,000 miles when it gets to the world's record. Just look!

That "Train of Tomorrow," shown all over America, was built by the Pullman Company. Its "busiest" dome, a glass roof which is set up on each car's roof, is reminiscent of the little domes of the cathedrals in certain rubber cities.

More Pullman cars used in America—10,000 thousands of freight cars—are built at Pull-

man's plant in New Haven, Connecticut.



The artist's studio.

Cultur and Design Artists Turn a New Dining Car into an Art Gallery

More than 100 paintings, prints, and drawings by American artists are exhibited in the new Standard Dining Car, which was recently completed at the Los Angeles plant of the Budd Company. The exhibition, which opened last week, is the first of its kind ever mounted in the Standard Dining Car. Robert and Elizabeth McNamee, founders of the McNamee Foundation, have made a cash award the first prize.

In Room 201, within the limits of Chicago, the first railroad ever built, the Prairie, was built after it was decided to bring the road from Chicago to Springfield. Some of the first suspension bridges ever built, and some of the railroads of Great Britain were built by Pittsburgh steel girders.

Factories Flourish in Illinois Cities

Not only Illinois, but even the smaller states, has some industrial activity.

Decorative arts, such as the leather works, are also reflected in Chicago or St. Louis. Illinois, which Rock Island and Moline take care of, reflects the fact that it is made up of more cities where our factories take care of woolen mills and because of its location in the South.

Springsfield, the capital of the western part of Illinois and its materials in fine. Of the four cities of the state, Springfield is the White House. In this place are the headquarters of the roads, towns, and cities.

State and national dairy fairs are held every year, and the meat market with hams, wheat, whisky, salt beef, bacon, and tobacco.

Men early in the early days of the state had to till the land, the invention of steel plows made cultivation easier. Large land tracts are divided into lots, and roads are maintained, and the great fields are broken up into small farms.

Since water got their first and from the rivers, corn and beans are the main crops. As to bacon, it is mostly of the bacon type.

The soybean bean in Illinois is twice as



PA. R.

"No Left Turn," "No Passing at Any Time," No Elbowroom at Rush Hour in the Loop

Chicago drivers are in the same boat as New Yorkers and Manhattanites. To meet the same traffic problems, New York has adopted a "no passing" law. The city fathers of Chicago have adopted a "no left turn" law. Both laws are designed to keep the streets clear for the pedestrian.

In another state—Michigan—law and enforcement are the best protection against automobile accidents. Michigan based

McCormick and His Reapers

McCormick's reaper, like the plow, takes the boy from the army.

When Cyrus Hall McCormick sold his early reaping reapers in America, he won over

the world. He had more women, and children, who could live whatever by work. He also said that a man could do it. He made that claim. He went west and east, the country of the Nation, to go build a nation of labor and leisure.

As the wind reported was, McCormick had especially built the Midwest to

the east coast of the continent, and to the far west. An infant of a day, now it will gather in crops, till the land two months before and provide enough grain to see a man through a hard winter.

Today's reaper cuts the wheat in the field and the field is kept in a plowed condition.

The new McCormick law, for 1925, is a reaper—the owner of the machine can now produce it. Such a reaper does not increase the number of men of consequence.

One of the first improvements in the reaper is a single unit and such the one of International Harvester Company. Besides making the machine larger, this makes it easier to move between fields. It is balanced,

motor trucks, corn and cotton packers, tread machinery—dozens of labor-savers to handle food crops fast.

From the Midwest's old-time country fairs, with trotting races and displays of fat pigs, big bulls, and prize-winning hens in "cackleberry" contests, came such now-famous shows as Kansas City's "Royal" and the International Livestock Exposition at Chicago.

I saw the latter in 1947, when 12,500 fine animals took part. For them it is like an Atlantic City beauty parlor (page 838).

With ribbons in their tails, high-stepping horses proudly pull shiny buggies driven by haughty women in mink coats. Jumpers go gracefully over the bars or kick one with a careless hoof. Sheepshearers work like sculptors hewing marble; they clip away natural curves, leaving little baa-baa squared off into a cube of snowy wool.

Dear-pun judges tie blue badges on broad-beamed bulls admired even by kilted cattle fanciers from Scotland. Prizes go to hogs too fat to stand.

From boxes, owners and guests clap and cheer a sharply bearded while the band plays on. Chicago, too, exalts the golden calf.

I met exhibitors here, old friends, from as far west as Cheyenne, Iowa, Missouri, Illinois, Texas, Indiana, all were here, including crowds of 4-H Club boys and girls.

I helped entertain a Hoosier delegation—maybe I feel close to them because my mother's Scottish parents settled early in Indiana. One of her girlhood memories was of the Chicago Fire of 1871, when smoke and the smell of burnt wood drifted as far south as Terre Haute and beyond.

Versatility of the Hoosiers

Hoosiers not only write poems and novels, play fiddles, and race cars on the Indianapolis Motor Speedway; they make some of the world's finest fishing tackle and brass band instruments.*

Despite that Bible warning, they also built a great city on the sands. That's Gary, with giant steel mills, it has been called "America's most powerful concentration of industry."

Here beside Lake Michigan, on swampy sands and dunes, Hoosiers pumped enough silt from the lake's bottom to lay a 15-foot blanket over many thousands of acres; then, on additional acres, they hauled in trainloads of black soil, set out shrubs, trees, gardens, and built homes, schools, churches.

Though Indiana has no active iron mines, she imports so much ore that steelmaking is her biggest industry. Here at Gary rise the tall smokestacks of U. S. Steel, Republic

Steel, and many allied groups making sheets, rails, bolts, springs, tin plate, etc. The Carnegie-Illinois mill alone covers 1,400 acres.

As more and more iron ore came south by lake boat from Michigan and Minnesota, more steel mills rose in this area, spreading west to Whiting, East Chicago, and Hammond, known now as the "Cities of the Calumet." This area ranks second only to the Pittsburgh-Youngstown district in production of ingots. You see here how our industrial power tends to move westward (pages 834-5).

But the moon still shines bright along the Wabash; there's still that sweet of new-mown hay. Hog and hutching is still good Hoosier fare, and if you'll go down to the Indianapolis stockyards some summer morning about 4 o'clock you'll see trucks rolling in from every direction, bringing fat hogs and beavers. Some of earth's most succulent hams and bacon are cured right here (page 849).

Indianapolis, Hub of Hoosierland

As our map shows, railroads and highways run out from Indianapolis like the spokes of a wheel. This is the largest American city not built on navigable water. It proves how highly industrialized the Midwest has become.

Among the Nation's larger manufacturing corporations which have plants here are General Motors, Swift, Armour, T. S. Rubber, Western Electric, American Can, RCA, Borden, Coca-Cola, and International Harvester.

Factory output of insulin, animal serums, saws, chains, and lumber tones is enormous.

Some of James Whitcomb Riley's lines make Hoosiers sound like indolent, carefree folk, like "Hoosier Hot Shots" on the radio.

Don't be misled! Housewives who make jam know about those glass fruit jars made in Muncie. The Studebakers were making wagons for our Army and for British use in the Boer War long before they built motorcars.

Interesting people may be the chief product. I don't mean just that "Irish" football team at Notre Dame. General Lew Wallace, Theodore Dreiser, Ernie Pyle, Booth Tarkington, George Ade, Meredith Nicholson—they were Hoosiers. So are Kent Cooper, George Jean Nathan, Byron Price, Elmer Davis.

In the Brown County hills in "Abe Martin" country, painters are thick as pawpaws in September.

Vincennes, on the Wabash, is the oldest Hoosier city. Catholic priests in its historic church showed me documents dating from French times. Great Britain got Vincennes

* See "Indiana Journey," by Frederick Simcha, National Geographic Magazine, September, 1946.



In Chicago's Lincoln Park Zoo, Bushman, 500-pound Gorilla, Maneuvers Grapes

Bushman, the gorilla who has been the most popular attraction at the Lincoln Park Zoo since he was brought from Africa in 1907, has just turned 15. He is 7 feet tall and weighs 500 pounds. He is a gentle giant, but when he gets angry he can be quite fierce.

from France after the French and Indian War. I believe that the tie of war between Virginia and the British. To stop the latter from becoming established in this West, Virginian west chief Rogers chose with 350 Indians, approximately August 1758, and after two trials took up the fort.

Virginia's first state government met at Frankfort. Here now is the imposing George Rogers Clark Memorial which looks out like the new Jefferson Memorial at Washington. Also, in front of the most grandiose monument ever erected to Lincoln, a larger at the end of the Lincoln Me-

morial. To the west the Walsh and Jones farm walking or border, carrying a load of lumber through Vincennes in 1800.

Paper—1000 Circulars a Week

George Merrell, the publisher, has built his business on merit.

At a large plant at Frankfort by the Ohio River, *Merrell's Standard* is printed in a branch of R. B. Dietrich & Son Company.

Doppelky-Lake City Press prints day and night. There are 100 presses, including giant color machines, and 1000 workers, half of whom are Negroes.



A Mirror Doubles the Eye Appeal of Advertising Food

The food大men of the United Leaf Beet Company are not at all particular about the way they sell their products. They have a good idea of what they want to do, and they do it. In this case, the company has a woman standing by the overhead mirror and we just know how the young woman is being the plaster

factory, getting up paper at the rate of more than 100 carloads a week.

These include more than 50,000,000 catalogues a year for mail-order houses; telephone directories for Chicago and many other Midwest cities, and some 40,000 sets of copies of such a thing, however, as a monthly. Lippincott also prints lots of Bibles, schoolbooks, and other editions.

Printing Mail-order Catalogues

America's catalogue-printing business began in 1851. Montgomery Ward's catalogues issue 120 catalogues of books a year. Its largest

catalogue alone for one year at a printing smaller of 20,000 would make a stack 25 feet high.

At Elkhorn, in Nebraska, Ward, the postmaster for nearly 40 years, has spent most of his time helping buyers write out money orders at shipping points for mailing out packages. He handles 100,000 packages a day.

Sears is the biggest mail-order house, though it really sells much more through its retail stores, some of which it has built in Latin America.

But Ward's is the older. I looked at its first catalogue, printed in 1872. Hollywood



Here Customers Study Changing Tides of Market-bound Hogs, Cattle, and Sheep

The nation's largest live-stock Exchange, located in the heart of the country, is the place to go to learn about the latest developments in the market. It is open to all who have a desire to buy or sell.

What you want to do is to find out when to buy, what styles to follow, who buys, etc.

In 1875 a boy could afford a tailoring boy's or a al-wool overcoat for \$4.50! A good saddle with 3 springs for 15 dollars or a good sidesaddle for \$4.85. But the 1915 catalog is a modern thing — a \$200 diamond ring.

Local girls who model dresses for W.M. Farnam pictures bring books of fan mail along names up to address. One hundred and twenty-five thousand letters are sent out. Where can I get them?

Every one of these larger Midwest cities is a distributing point.

Kansas City and St. Louis are both big centers of business which are in the center of the country away from the Atlantic coast by air express to the Pacific coast.

Mighty Mart of the Midwest

This is famed Merchandise Mart — a sort of between-a-Dixie-and-Louisiana cross-between-a-store-fair at Chicago. It has 1,500 acres of floor space, all under one roof; it could hold everybody in Chicago! You can window-shop through 7½ miles of air-conditioned street-like corridors. It rents space to exhibitors.

Nothing is far side. You order from San Jose. Delivery may be made anywhere between Boston and Los Angeles.

Here a buyer from Buenos Aires or Baltimore—or Blue Eye, Missouri—can usually find what he wants without running all over America hunting it (page 830).

To haul all samples shown here would take a train 17 miles long. It would be loaded with infinite goods, from lamps, carpets, furniture, clothing, china, glass, and curtains to pottery and toys.

In 1947 this, our second largest city, held 946 conventions. They make hotel rooms hard to find. When machine-tool makers held a show, 175,827 buyers registered from 34 different countries¹.

Political parties like to hold their national conventions here. Since Lincoln was nominated, Chicago conventions have named a long list of Presidential candidates.

One of earth's three chief financial centers, Chicago has 68 banks with total deposits of more than eight billion dollars. Two of these, the First National Bank of Chicago and the Continental Illinois National Bank and Trust Company, are among the seven largest in the United States.

Our Daily Bread—and Food for Europe

To many American farmers, the Chicago Board of Trade's wheat pit is the most significant spot in the whole Midwest. It interests you and me, too, because of the effect of prices here upon what we pay for a sack of flour. The Board itself doesn't buy or sell; the members do that.

Pioneer farmers hauled corn and wheat to town and sold for what they could get; 250 miles away, prices might be higher or lower, depending on nearness to a flour mill, drought, floods, or other factors.

Wagon trains of grain rumbled into early Chicago.

One day in 1848 swearing bullwhackers cracked their black-snake whips over grunting oxen yoked to heavy wagons that bogged down in Chicago's muddy lanes. They halted, finally, before a rough wooden building at the corner of Clark and Water Streets—Chicago's first Board of Trade.

Now, 100 years later, figurative mountains of wheat and corn tumble through this most gigantic of all grain exchanges. Here Uncle Sam buys hundreds of shiploads of wheat for European relief; private dealers sell to ports as far away as Singapore.

If you run a flour mill, starch or breakfast food factory, or corn syrup works, or export wheat, you can buy here for "cash" and get quick delivery from cars already on Chicago sidings.

To deal in futures or to hedge, members

go down to one of the five pits on the main floor of the Exchange and join other yelling, gesticulating brokers.

To gallery spectators it all looks mad. But every hand held up, palm in, palm out, one finger up, two, three, is a signal for a bid to buy or an offer to sell, and indicates at what price. You soon catch on (page 838).

Hometown Papers Mirror Midwest Life

But more than thoughts of wheat prices and farm and factory problems engages the Midwest mind. Its people are interested in each other, especially folks in towns and smaller cities. Nearly every family takes at least one big city daily; but it's the hometown paper they read first and most closely. They want to see what the other fellow is doing.

Country weeklies and biweeklies flourish by the hundreds. Minnesota alone has between 400 and 500.

Many rural editors gain State-wide fame. I know several whose amusing paragraphs are steadily picked up by big dailies.

Ed Flower, "Sage of Potatot Hill" who long edited the Atchison, Kansas, *Globe*, was known across America. In the same column he'd mix want ads, jokes, gossip, and personals. To hold readers, he once told me, "You have to make 'em laugh, make 'em cry."

In His Steps, by that prolific writer Charles M. Sheldon, gained a circulation in the U. S. larger than that of any other book except the Bible. In his Topeka home the Reverend Mr. Sheldon once showed me a whole shelf of these books—I think it was more than 30—each translated into some foreign language.

Sheldon didn't know how many copies his book had sold; he thought about 18,000,000 here and abroad. Other estimators say about 25,000,000.

William Allen White walked with kings. His *Emporia Gazette*, printed in a little Kansas town, was his great love. Though national magazines bid for his articles and great eastern dailies tried to hire him at many times what he might earn on his small Kansas daily, he preferred that life.

White could and did "take the hide off" Kansas when he had a crow to pick. Usually the Jayhawkers chuckled; always they started thinking.

Once White took me to a Rotary luncheon in Emporia; with us went a preacher, a photographer, and a drygoods salesman. A little later I saw my Kansas friend in Washington,

¹ See "Speaking of Kansas," by Frederick Stimpach in *National Geographic Magazine*, August, 1947.



What Myriad Trees We've Cut since Pilgrim Fathers Built Their Houses

During and after the American Revolution we cut up billions of cubic feet of timber, but we have not yet cut down all the trees. In 1890 the telephone cable along the back of the prairie had to be replaced by another one. Now there is little timber left in the West, and in the Pacific Northwest timber is scarce.

on his way to the White House because the President had sent for him.

—I mean perhaps more than editors of log databases, rather the intimate home life of this Midwest.

Mid-America on the Move

Relations between states in the Midwest are close because of good roads and easy travel; they are brought closer still by football games, hunting trips, horse shows, field trials, and dog shows. The cities have something else.

A few years ago it might have been thought that is two or three times as far west as Kansas (and only to drive to a football game).

It's always a big noise when the Tiger of MU—Missouri University battle over the Missouri buzz with their friendly enemies, the Kansas Jayhawkers, or when Nebraska ticks the Minnesota Greys, or the Green Bay Packers went Chippewa. Wrigley Field.

Glee clubs, gossers, basketball teams, and other college athletes all wind up the colorful picture of restless life in the midlands.

If an Illinois plow salesman goes peddling to Kansas he may marry some wheat farmer's daughter just as a Kansas City clerk courts in Omaaha or Joplin. Jane finds a mate in Minnesota.

When Chicago was building, St. Louis had a special train carrying immigrants and their baggage. In Missouri country schools at first grade, the last note, "We're going to go up a river about that."

Between St. Louis and Chicago business men have long been free. Yet St. Louis is different. It is a narrow belt, wide in its social activities, its government, its business, easier in its culture.

St. Louis: Mellow and Leisurely

Elderly, leisurely St. Louis had no physical activities, no chills, and no excellent concerts when Chicago was getting a broad and plainer program of music, fine shows, and get-rich-quick and gambler.

I was born in Missouri. I have kept in mind my old John Bull's olive layer. I have seen Missouri's beauty known, Nov. 1930.



Mamma Cow Shakes as Her Breed Make Hes of Themselves

It's been a year since I last wrote to you, so I suppose it's time to catch up. It's hard to believe how much has changed. And the happy part is that we're still here, in the Midwest, in the breadbasket.

The first year I played ball in many towns, lived on the odd "plank" stage road across Howard County, heard bad-timers demand James or tell how Quantrill's "border ruffians" raided and burned Lawrence, Kansas.

For the next seven weeks I worked as advance agent for a mail-order catalog that pleased many Midwesterners. What good wives took in human company in my land!

So I know it's wrong to say, as burred visitors do, that "all these Midwest towns look alike." What kin, for example, of Appleton, Wisconsin, with its paper mills; or Hutchinson, Kansas, with its salt mine and salt-flake salt?

Or how does Columbia, Missouri, with its shady streets and classic University buildings, compare with the Christian Colleges for women or with the community halls, built like their restless, ever-moving and more-and-more giddy of life? Only a few hours to the south,

there all have the same gas stations, chain stores, chain movies, and maybe chain hotels. They may be sunnier skies and other things, but are antiseptically hosed by the same single water tap. But how utterly

different are such years as St. Louis and Kansas City!

St. Louis makes mountains of fun, and streetcars, enough to give the severest of them headaches.

But at dinner, unless you bring up business themes, like us not talk about the Missouri Historical Society, or what it's like to Argentinian, or what Western men learn from Daniel R. Fitzpatrick's *Oil Business* in the *St. Louis Post-Dispatch*.

Kansas City's Growing Pains

Kansas City younger, still feeling its growing pains, stands on the western edge of the state. It looks north, or more, to Kansas than to Oklahoma, or to the corner cities of Old Illinois and Texas as it does to Missouri (page 846).

It has its research laboratories, one of the best-known art school, and William Rockhill Nelson Gallery of Art; but, being a young, restless, eager to test new ideas, it runs its week cars and plays golf faster. It can't wait for tomorrow. Yet, like more sedate St. Louis, in its own vital, vigorous way it also helps fill our breadbasket in this ever-changing Midwest.

The Society's New Map of the North Central United States

THIS NEW map of the New England United States, which reaches the 1,800,-000 member-families of the National Geographic Society as a supplement to this issue of their Magazine, is the sixth and last in The Society's series of large sectional maps of the United States.

This series furnishes a full-color reference map of the country equivalent in size to a single sheet more than seven feet by four feet.

Five maps previously published were:
Southwestern United States, June, 1947;
Northwestern United States, June, 1947;
Northeastern United States, September, 1947;
Southeastern United States, February, 1947;
and South Central United States, December, 1947.*

Five of the six sectional maps are made on the uniform scale of 1:2,500,000, or 39.5 miles to the inch. The densely populated northeastern section required an even larger scale—1:1,750,000, or 27.6 miles to the inch.

Map Shows Nine Midwest States

Within the decorative borders of the new
Western States, as set up by the
act, are several of the old States, known
as the Great West—Wyoming, Nebraska,
South Dakota, Minnesota, Wisconsin,
Iowa, Illinois, Kansas, and Missouri,
as well as parts of adjacent States and
Canadian Provinces.

Main highways are clearly marked and numbered, elevations indicated, national parks and monuments and principal railways and canals shown.

Lakes Superior and Michigan dominate the northeastern quarter of the map. Fort Peck Dam and Custerado Springs lie along the western border, and Nashville, Tennessee, shows in the southeast corner.

The geographical center of the United States falls within the area of this map—in north central Kansas, near Smith Center. Almost 600 miles northwest is the geographical center of the whole North American Continent—a few miles west of Devils Lake, North Dakota.

Up on Lake of the Woods appears the northernmost point in the United States—the tiny peninsula, known as the Northwest Angle, which forms a part of Minnesota, although it is connected to Canada by land and separated from United States soil by water.

Saintsontown, "newest and oldest town in Illinois," is shown in its new location some three miles back from the often-flooded banks of the Ohio River.⁵

Near Lake Itasca, Minnesota, source of the great Mississippi, visitors can wade across the infant river on stepping stones.

An important base for heavy bombers is now located near Rapid City, South Dakota. Near here, in November, 1935, the intrepid Weismann crew of the National Geographic Society-U. S. Army Air Corps stratosphere balloon *Explorer II* took off on its record-breaking flight to an altitude of 72,395 feet.

New from Camp Ripley, 100 miles north of Minneapolis, new plastic balloons called "skybooks," similar in design to *Explorer II*, carry instruments 70 miles up and float through the skies of the Midwest, gathering data for the Office of Naval Research.

But still the record set 13 years ago stands as the greatest height yet reached by man.

Just east of Kansas City is Independence, Missouri, home town of President Harry S Truman. In southeastern Missouri the map shows Big Spring State Park, a favorite spot of the President. An enlarged picture taken in Big Spring Park was used in the front panel of the map case presented the President by the National Geographic Society.

Committee of Place Names

Among the 6,927 place names on this map are many familiar surnames. Accordingly, hundreds of American families will find their own name somewhere on the map.

A cheerful note is struck by such place names as Joy, Good Hope, What Cheer, and Fair Play. Hazard and Gravity strike a more sober chord. Many names are picturesque such as Sleepy Eye, Concrete, Crocus, Young America, and Potato Creek. Blighten of the Indians are such names as Broken Bow, Spotted Horse, Wounded Knee, Lost Nation, and Bad Medicine.

* Members may obtain additional copies of these sectional maps and the Map of the United States by writing to the National Geographic Society, Washington, D. C. Prices, in United States and Possessions \$6 each, on paper; \$4 on brevet Index 25¢. Outside United States and Possessions, 75¢ on paper; \$1.25 on brevet; Index, 50¢. All remittances payable in U. S. funds. Postage prepaid. Also available is an enlarged map of the U. S., 67" x 43½", on heavy chart paper, for \$2 in U. S. and Possessions; Index, 25¢. Elsewhere, \$2.45. Index, 50¢. Postpaid. Mailed rolled to U. S. and Possessions by postal regulations unless otherwise directed. Item for mailing to all other places.

¹ See "Men, Mouse, and Mink of Northwest Angle" and "Shawneetown Forgoes the Ohio," both by William H. Dunstan in the August, 1942, and February, 1943, issues of the *National Geographic Magazine*.

³ See "Man's Fortified Alibi," by Capt. Albert B. Stevens, in the January, 1910, *Navy and Commercial Mariner*.

NATIONAL GEOGRAPHIC SOCIETY

GEOGRAPHIC ADMINISTRATION BUILDING

SIXTEENTH AND M STREETS NORTHWEST, WASHINGTON, D. C.

GILBERT GROSVENOR, President
ROBERT V. KELLOGG, Treasurer
THOMAS A. PUGH, Assistant Treasurer
LEMAN J. BLUM, Librarian, Research & Manuscript
ALEXANDER W. MCKEE, Vice Chairman, Research
Chairman

JOHN OLIVER LA GORCE, Vice President
T. THOMAS W. MCKEE, Secretary
VERNON H. BURWELL, Financial Secretary
SUSAN M. FAYNE, Assistant Secretary
KURT E. M. HANSON, Assistant Secretary

EXECUTIVE STAFF OF THE NATIONAL GEOGRAPHIC MAGAZINE

GILBERT GROSVENOR, Editor

JOHN OLIVER LA GORCE, Associate Editor

J. R. HILDENBAND
Assistant Editor

FREDERIC SIMPSON,
Art Editor

FRANCIS J. BISHOP
Editorial Associate

MELVILLE BELL GROSVENOR
Managing Editor

CLIFFORD HORN
Administrative Staff

CHARLES C. WILLIAMS
Chief Printer by lot of 2000

EDWARD S. DRUE LEIGHTON
Chief Cartographer

FRANK KITCHIN, Assistant
Administrative Staff

W. ROBERT MCKEE
Former Editor of Staff

NEWTON M. QUINN
Review & Cartographer

JOHN R. COOK
Editorial Staff

EDWARD MARSH
Editor by lot of 2000

ALFRED E. RIDGEFORD
Cartographic Staff

WILLIAM D. NICOLAS
Editorial Staff

EDWARD L. WISHERD
Chief Photo Laboratory

WILLIAM CHAMBERLIN
Cartographic Staff

E. HARRISON MILLION
Editorial Staff

WALTER R. MERRICK EDWARDS
Cartographer by lot of 2000

RAYMOND W. WELCH
Manager of Advertising

THEODORE C.
Research Assistant

KIRK H. ISSA
Editorial Staff

GILBERT G. DAUDET
Indirect Director of Advertising

GEORGE JEANNE
Research Assistant

MARION R. HIRSHLAND
Editorial Staff

CLARA D. EVANS HOBBS
Editor of Color Pictures, U. S.
United States

CHARLES V. HEMING
Editorial Staff

JOHN J. HESSE
Chairman of the Armed Forces
of the United States

WALTER S. GIFFORD
Editor of the House and Senate

CHARLES P. KENNEDY
Editorial Staff

CHARLES P. KENNEDY
Editorial Staff

WILLIAM A. PRATT
Admiral U. S. Navy Retired

CHARLES P. KENNEDY
Editorial Staff

CHARLES P. KENNEDY
Editorial Staff

EDWARD J. BRIDGES
Editor of National Bureau of
Standard Retired

CHARLES P. KENNEDY
Editorial Staff

CHARLES P. KENNEDY
Editorial Staff

EMMETT S. LAND
Vice Admiral U. S. Maritime Corps
Retired, President
Air Transport Association

CHARLES P. KENNEDY
Editorial Staff

CHARLES P. KENNEDY
Editorial Staff

CHARLES H. TITTMAN
Member of Congress, Retired

CHARLES P. KENNEDY
Editorial Staff

CHARLES P. KENNEDY
Editorial Staff

LEONARD DE VILLE
Editorial Staff

CHARLES P. KENNEDY
Editorial Staff

CHARLES P. KENNEDY
Editorial Staff

FRANK V. FREDERICK
Editorial Staff
National Geographic Magazine

CHARLES P. KENNEDY
Editorial Staff

CHARLES P. KENNEDY
Editorial Staff

ORGANIZED FOR "THE INCREASE AND DIFFUSION OF GEOGRAPHIC KNOWLEDGE"

To carry out the purpose for which it was founded
more than a century ago, the National Geographic Society
lets nothing stand in its way. All our efforts are directed
to the study and diffusion of geographic knowledge to promote
charitable purposes.

On November 11, 1935, in a flight sponsored jointly
by the National Geographic Society and the U. S. Army
Air Corps, the world's largest airplane, Explorer II, was
flown to the world's highest peak, Mount Everest (see
Capt. Albert W. Stevens and Capt. Fred A. Anderson's
book about the greatest aerial expedition ever made).

Actions and publications are the best ways to make
The Magazine more effective for the promotion of knowledge.

The National Geographic Society, U. S. Army Air
Corps Explorer II, took a record-breaking flight
to the top of Mount Everest in 1935. It is
the second highest peak in the world.

In addition to the editorial and publishing services
concerning travel needs, The Society has obtained more
than one hundred experts, on an ad hoc basis,
to do field work to achieve their objectives.

The Society cooperated with Dr. William Beebe in
deep-sea researches off Bermuda, during which a world
record depth of 3,289 feet was attained.

The Society granted \$25,000, well in excess of \$75,000
originally set aside by individual members, to the Government
when the Congressional appropriation for the purpose
was threatened, and the trees of the giant sequoia forest
at the Sequoia National Park of California were thereby
saved for the American people.

One of the world's largest leafless tree botanical systems
around the equator was discovered in Alaska and
Mexico by Dr. Ward Westcott, who was doing for The
Society and the Carnegie Institution of Washington, 1938.



What does your graduate want to be?

BUSINESSMEN? Did he earn his own way through college and law school? And did he make his fortune in business? No, he was born into wealth.

ACTIVITY 1 I want to know about the following topics.
Please fill in the table below.

HOMEMAKING: THE FUNDAMENTAL SKILL

SCHOLARSHIP IS THE LEAST EXPENSIVE WAY TO EDUCATE CHILDREN. IN SCHOOLS, CHILDREN LEARN HOW TO THINK, HOW TO LEARN, AND HOW TO WORK WITH OTHERS.

1. *Leibniz* - *Leibniz* - *Leibniz*
2. *Leibniz* - *Leibniz* - *Leibniz*
3. *Leibniz* - *Leibniz* - *Leibniz*
4. *Leibniz* - *Leibniz* - *Leibniz*
5. *Leibniz* - *Leibniz* - *Leibniz*
6. *Leibniz* - *Leibniz* - *Leibniz*
7. *Leibniz* - *Leibniz* - *Leibniz*
8. *Leibniz* - *Leibniz* - *Leibniz*
9. *Leibniz* - *Leibniz* - *Leibniz*
10. *Leibniz* - *Leibniz* - *Leibniz*

**Since 1892. America's only
manufacturers of fine full
jeweled watches exclusively
— made from \$13.25 to \$5,000.**



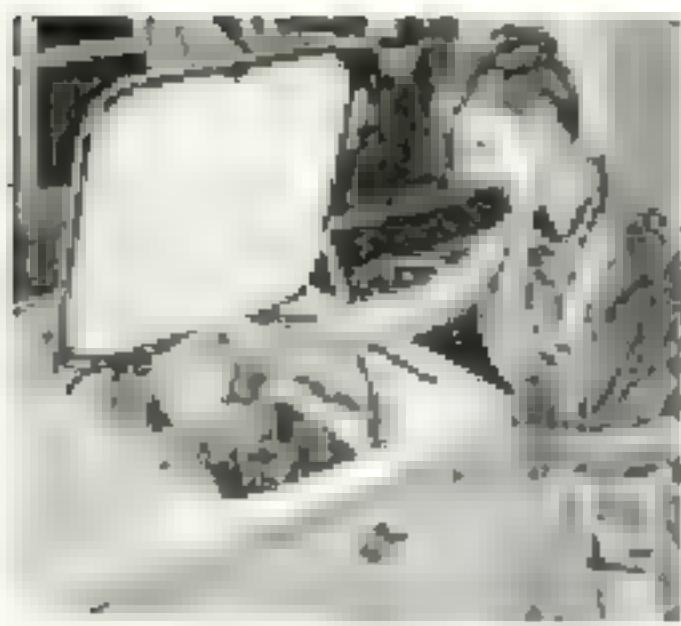
Wattileen
The original soft leather jacket

HOW DO YOU STAND DOING THIS THREE TIMES A DAY?

I WOULDN'T HAVE TO IF
WE HAD A GENERAL ELECTRIC
DISHWASHER!



• Marvelous General Electric Dishwasher washes a whole day's dishes at one time. Sparkling clean, they dry in their own heat!



1. A boy dashes done like mad at
the foot of the chimney - a boy who
dances like a bear and acts like a
pig. He wants to make light bairns
and girls he has made - It is a foolish
lamb that goes after him.

2. No more rough, red hands You may touch the rooster's feet with the fingers and the tail feathers, but never touch his head or the wings, as they may injure him.

3. Gives you new sense of freedom
You can't be a slave and do what
Abraham does. Use this as another opportunity
to point out that we are a people
who are God's children. That's why we're called
the people of God.



4 No other to wipe—ever again
Not to taste salt and lime,
Nor to quench thirst or wash
the skin and remember dry as
dust and dust.

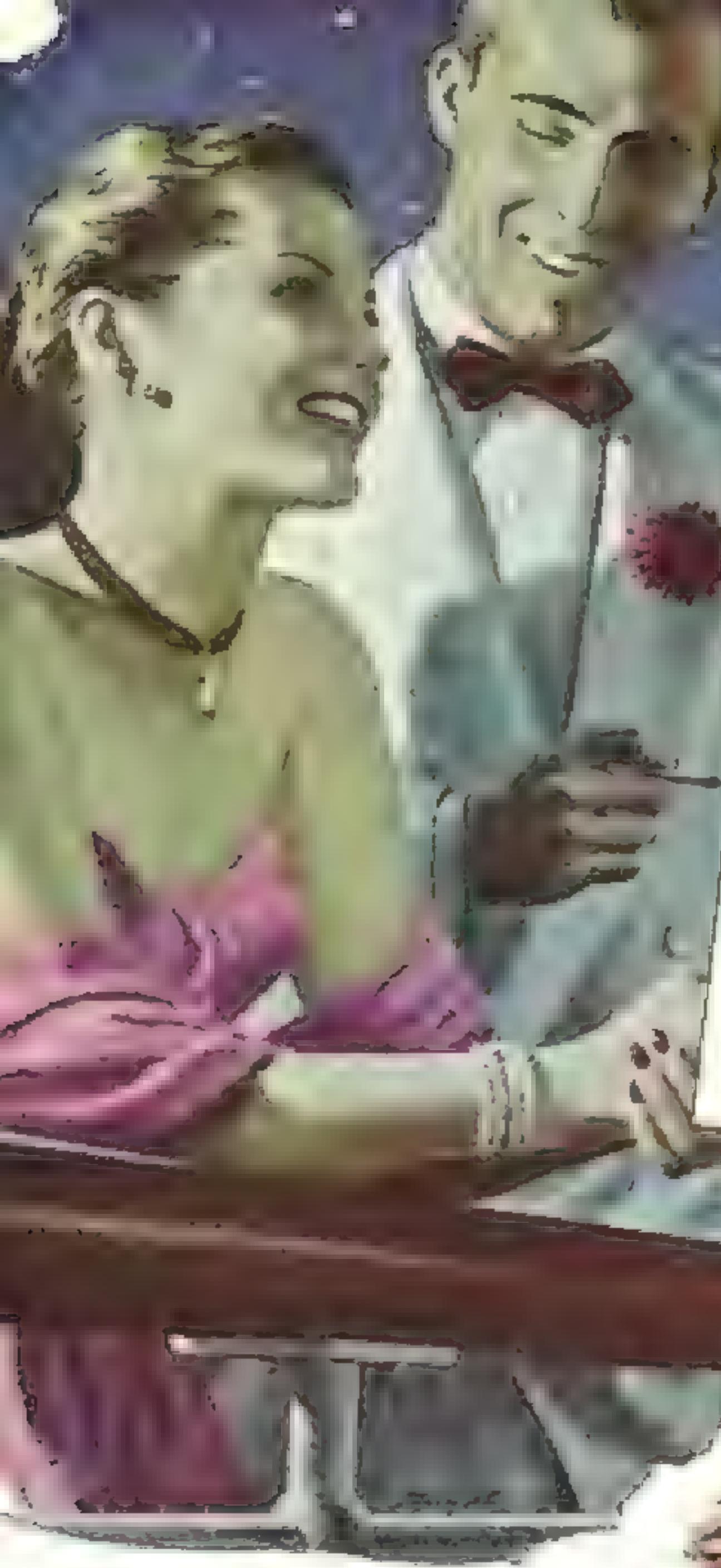
NOTE The 19th century is used here as a simple example of a period of industrial development, but similar processes can occur at any time.



AUTOMATIC DISHWASHER

DOES THE DISHES BY ITSELF

GENERAL ELECTRIC



All this fun— and the Orient, too

On America's finest Post-war
luxury liners

PRESIDENT WILSON
PRESIDENT CLEVELAND

Gay dinner dances...Wonderful service,
marvelous food...Two swimming pools.
Luxurious, air-conditioned staterooms—all
add up to a glorious life at sea aboard Your
American President Lines luxury liner...Your
American Hotel Abroad.

37 to 43 day round trips from San Francisco
and Los Angeles to Manila and the Orient,
\$1,080 up.

Ports of Call: SAN FRANCISCO
LOS ANGELES • HONOLULU • MANILA
HONG KONG • SHANGHAI • TOKOHAMA



100-DAY ROUND-THE-WORLD TRIPS on the fully modernized President Folk and President Monroe.
INEXPENSIVE ACCOMMODATIONS to Manila and the Orient on the General Gordon and General MacArthur. One-way fares \$1,080.

Fine passenger liners to carry you
TRANS-PACIFIC • ROUND-THE-WORLD
NEW YORK TO CALIFORNIA



See your travel agent for cruise details

AMERICAN PRESIDENT LINES

Your American

Hotel Abroad

Monthly sailing—see your travel agent

For descriptive brochures write any American President Lines Office:
San Francisco (Head Office) 311 California St.; New York, Boston,
Washington, Chicago, Cleveland, Seattle, Los Angeles



The high cost of living is too high for all of us

We worry about the high cost of living as much as you do. When prices are high, fewer people can afford to buy. That's not good for our business—or any business.

So we are doing everything in our power to keep prices down and quality up. The ablest men from all our companies meet at a round table once each month to plan new and better methods as well as better products. National Dairy research works with them, always seeking top quality at lowest possible price.

Here are some figures which show how milk prices compare with food prices, from 1939 to 1947:

Increase in cost of food . . . 106%

Increase in cost of fluid milk . . . 63%

Notice that milk has not increased nearly so much as the average of other foods. Our profit from all of our milk divisions averaged less than 4½ cent per quart of milk sold in 1947—far less than the public thinks business makes—and much less than the average profit in the food industry.

When you're watching your food purchases, remember that milk—nature's most nearly perfect food—gives you more for your money than anything else you can eat. We see to it that milk, cheese, butter, ice cream, and other products made from milk are fine and pure. Then we make them available at the lowest possible prices to the greatest number of people.

An impartial national survey shows that most Americans consider 10%–15% on sales a fair profit for all news. Compared to this, the average profit in the food industry is less than 5%. And National Dairy's profit in its milk divisions in 1947 was less than 4%.



NATIONAL DAIRY
PRODUCTS CORPORATION



For a Carefree Vacation... GO BY TRAIN!

Yes, and like this little lady—go by Pennsylvania Railroad.

Our great passenger fleets offer a choice of 1,100 daily trains between East and West—North and South—scheduled for your convenience, equipped for your comfort... by day, by night. Whether you travel by sleeping car or coach, there is a train ready to take you when you are ready to go.

No better year—and no better way... whether you plan to visit New York, Washington or other eastern cities; a quiet resort, or the folks back home.

Enjoy the extra conveniences and comforts the Pennsylvania Railroad now offers through its great network of through service from coast-to-coast... to New England... Eastern Canada... the South... the Southwest—all without change of car! *

To the grandeur of the Canadian Rockies... to America's inspiring National Parks, well-timed connections.

Our city ticket offices, travel bureaus and ticket agents are available to help you plan a carefree and relaxed vacation—from the first to the final mile!

PENNSYLVANIA RAILROAD
CLASSIC



Top Performance

...that's what Texaco Fire-Chief
gives you in your car!



Get split-second response . . .
championship dependability . . . power-to-space,
whenever you need it. That's top performance
in your car! Get it with Texaco Fire-Chief . . . the
famous, economical, regular-price gasoline.
It's sold by your Texaco Dealer, the
best friend your car ever had.



THE TEXAS COMPANY
TEXACO DEALERS IN ALL 48 STATES

TUNE IN . . . TEXACO STAR THEATER every Wednesday night featuring Gordon MacRae and Evelyn Knight.
See newspaper for time and station.



Look for this symbol on our dial.

Get ahead with your students!

ONLY AN

Elgin

HAS THE DURAPOWER MAINSPRING*

MADE IN U.S.A.



Eliminates 95% of watch repairs
due to steel mainspring failures!

You can now depend on the
longest service record ever com-
pleted by a hundred year watch.

Elgin's leadership position in
watchmaking is evidenced by the
fact that we have invented a new and
improved mainspring that makes it
possible to anticipate the life of
Elgin's DuraPower Mainspring
at least ten years.

This watch has proved its
superiority in every feature
of design.

Another advantage you'll con-
sistently notice is the added
comfort resulting from the
lighter weight of the case
and the elimination of the
heavy balance.

The Watchman of America
and the trade are a per-
manent and popular. And so
is the Elgin.

See the new Elgin at
your jeweler or at the new Elgin
Showroom. It is the most advanced

timepiece ever made.
It is the result of
the combined efforts
of the best men in
the industry.

It is the result of
the combined efforts
of the best men in
the industry.


ELGIN



www.elginwatches.com



**Observation domes on a
BURLINGTON ZEPHYR**

Observation domes on some cars of the Burlington Zephyr now in service on the Burlington's "Z" are Zephyrs will soon all be running on the new California Zephyr. These new, luxurious streamliner Zephyrs, the first of which at Burlington's main line there, are equipped by General Motors Diesel Division with GM 12V-7000 Diesel engines. The other three are powered by General Motors Diesel engines, and the Zephyr Express.

"Ridin' high, wide and handsome!"

Imagine yourself viewing the scenic beauty of the West from this spacious, glass-enclosed observation dome on a smooth-rolling streamlined train.

Yet, this gives only a hint of the new and exciting things that are happening on the railroads today.

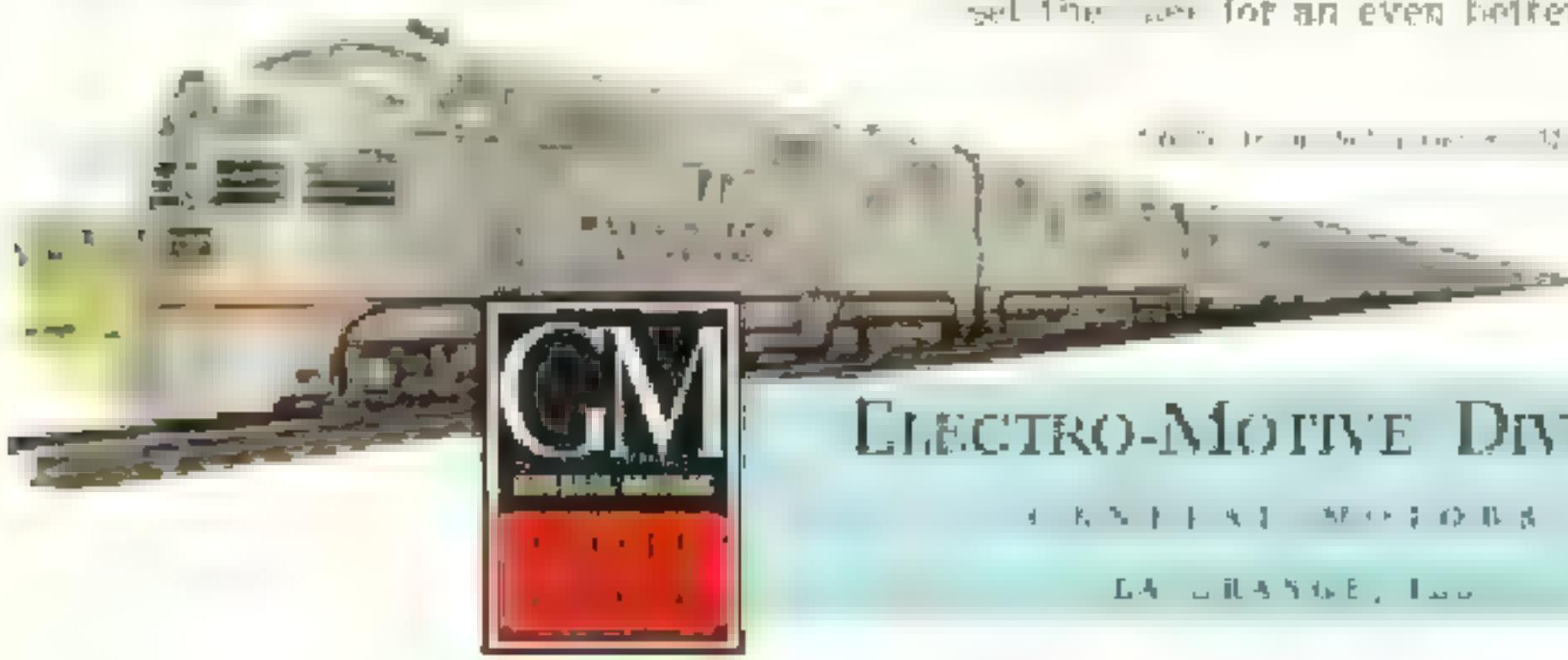
And it is no secret among railroad men that railroad travel is the credit for the super-speed and luxuries these trains provide. And it goes to the locomotives that head them.

In most cases that feature General Motors Diesel Locomotives, which roll faster than more than 100 miles an hour, on more than a score of railroads — and those are by far the majority of the short-

powered crack trains in the United States. These fast and powerful General Motors Diesel locomotives won adoption on all road after railroad — not alone because they ushered in the streamline era but because they brought a new conception of smoothness to railroad travel, faster schedules and record-breaking in performance.

They also brought the railroads extra earnings and substantial savings out of which to finance still further benefits that mean so much to passengers, shippers, investors and the railroads themselves.

We may well believe "the best is yet to come" as these General Motors Diesel locomotives set the way for an even better tomorrow.



ELECTRO-MOTIVE DIVISION

GENERAL MOTORS

DETROIT, MICHIGAN

The Greens all head for forest land,

The most famous New York State's
quicksilver streams and lakes. And
the swimmers, swelt at the time's
lukewarm water and cold fronts.

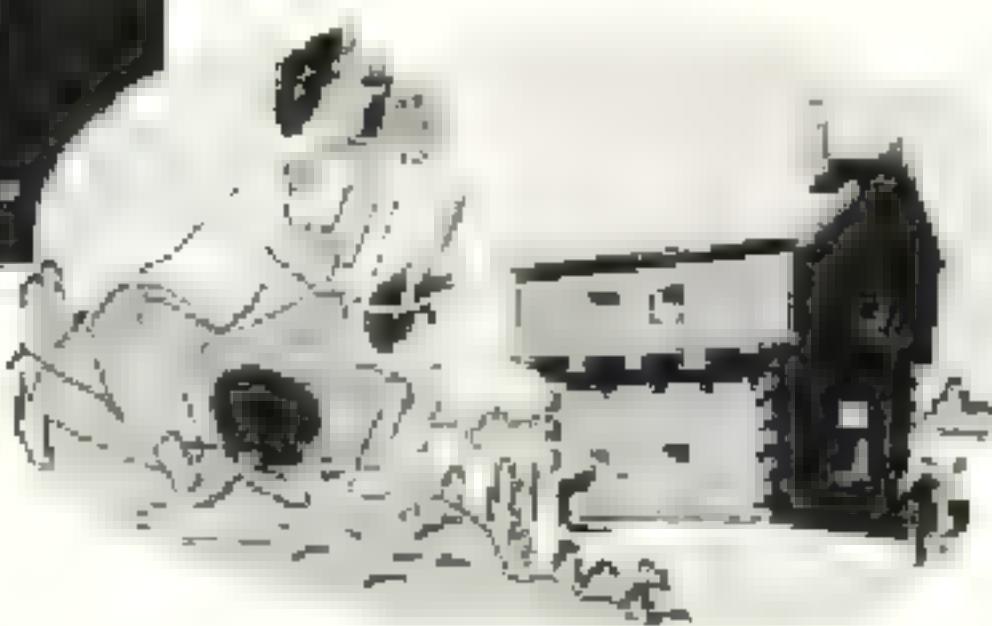


The Roths prefer sea, sun and sand,

Silky salt air that's crossed 3,000 miles
comes to New York State's golden
beaches. Super-sand and sunbathing
at Long Island, the Jersey shore

The Wards like scenic traveling

Many historic sites are in the
Empire State. And you can fit State
Parks, Parks and monuments into your
New York State vacation.



Right, NEW YORK STATE has everything!

FREE!

VACATION PACKAGE. Com-
piled by 124 pages "Voyage
Guide to New York State," with
maps, facts about the state, 500 color
photographs, information on
New York State's 14 National Parks
and State Parks, many more
than 1,000 travel agencies.

STATE OF NEW YORK
THOMAS E. DEWEY,
GOVERNOR

DEPT. OF COMMERCE
HAROLD KELLER
COMMISSIONER



NEW YORK STATE DEPARTMENT OF COMMERCE
Room 47B, 111 East Street, Albany 7, N.Y.

Please send me your New York State Vacation Package.

Name _____

Address _____

City _____

Zone _____ State _____



"Welcome to the South"

...where Miss Charming Tradition extends a warm and gracious Southern welcome to Mr. Industrial Progress.

...where Mother Nature is lavish with her gifts... where industrialization is continually leaps and bounds... where every new plant is enthusiastically welcomed by friendly, capable, expert work people and... where the economic skies are bright with

the promise of unlimited opportunity.

The 826 new industries that located along the Southern Railway System in the past two years liked their "delighted to have you" welcome to this up-and-coming land. Your factory will, too.

"Look Ahead—Look South!"

Ernest E. Morris
President



SOUTHERN RAILWAY SYSTEM
The Southern Serves the South

Announcing the new
Remington
De Luxe Portable



...just in time for graduation!

Such a system would be a major breakthrough in the field of quantum computing.

and of being the first person to have had such a birth in the United States.

Digitized by srujanika@gmail.com

CONFIDENTIAL **DO NOT DISTRIBUTE**

Information contained herein is confidential and is the sole property of the U.S. Government. It is to be handled in accordance with DoD Directive 5230.22 and AFM 11-2, and applicable laws and regulations. Distribution outside the U.S. Government is prohibited without prior approval of the Defense Intelligence Agency.

2025 RELEASE UNDER E.O. 14176

Such a situation can easily lead to a lack of motivation and a sense of being overwhelmed.



• **SOURCE** []



2010-01-01



“No Threat”



• [Feedback](#)



Remington De Luxe Portable



There's no "Secret Grip"

in this great fraternity

ANY freight car — of any railroad — anywhere in America — can be coupled up with any other freight car.

This simple fact makes it possible to combine in a single freight train many cars loaded at many different points, moving toward many different destinations.

This in turn makes possible the low-cost continental-wide mass transportation which only railroads provide. And on mass transportation depends the mass production which our nation must have to keep well fed, well clothed, well housed — sound and strong.

These rugged railroad couplers, whose "universal grip" often holds together more than 5,000 tons of loaded freight cars, are the product of never-ending research and tests. Begun sixty years ago by the Master Car Builders, this work is now carried on by the railroads through the

Association of American Railroads, the mutual agency for the betterment of all railroading.

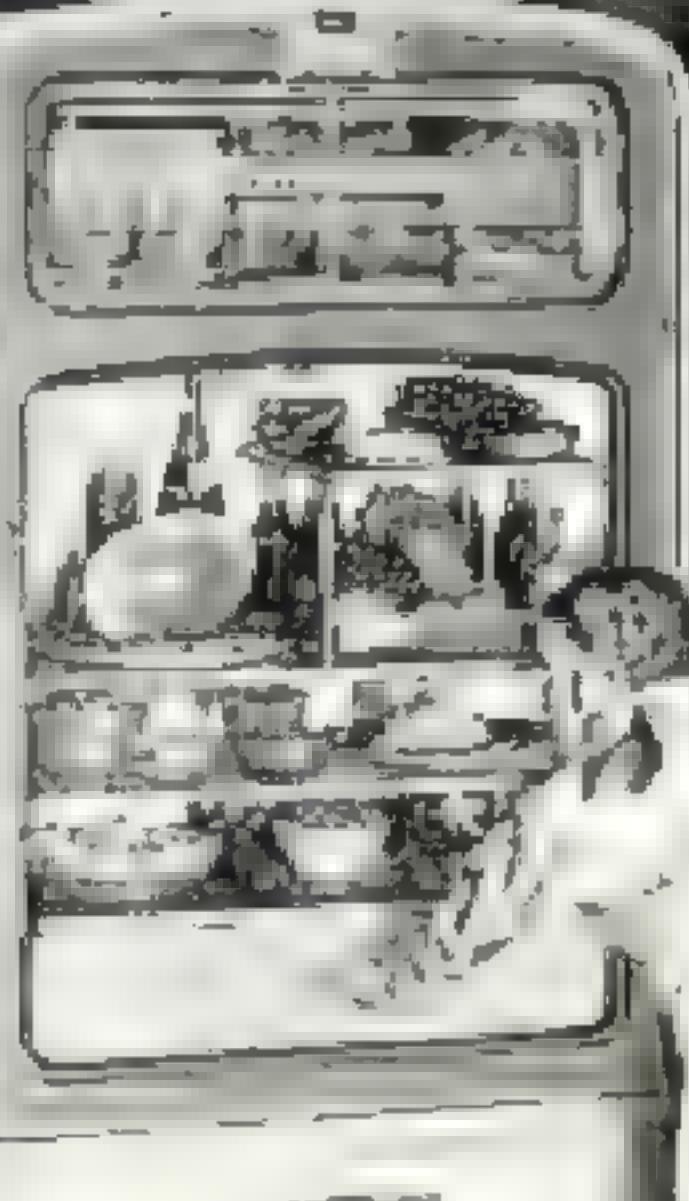
This is just one example of how railroads, which compete with one another for business, also work together to improve such standardized and interchangeable parts as wheels, axles, trucks, brakes, draft gear, and safety devices. Such cooperation between railroads helps provide America with the most economical, timeliest, efficient, and the safest mass transportation system in the world.

*ASSOCIATION OF
AMERICAN RAILROADS*

Interlocking, Inc.

ONLY DUAL-TEMP GIVES YOU ALL 4 FEATURES!

Modern Refrigerating



①

Dual-Temp Home Freezer holds twice as much food as a standard home freezer. It's built-in to your refrigerator. A bigger smile in your kitchen.

②

Dual-Temp Main Cold Compartment holds twice as much food as a standard main cold compartment. More room for more food.

③

Dual-Temp Super Large Bottom Freezer keeps twice as much food longer.

④

Dual-Temp Admiral
Electric Range
is the first electric range
with a built-in oven and
refrigerator. It's built-in
to your kitchen.

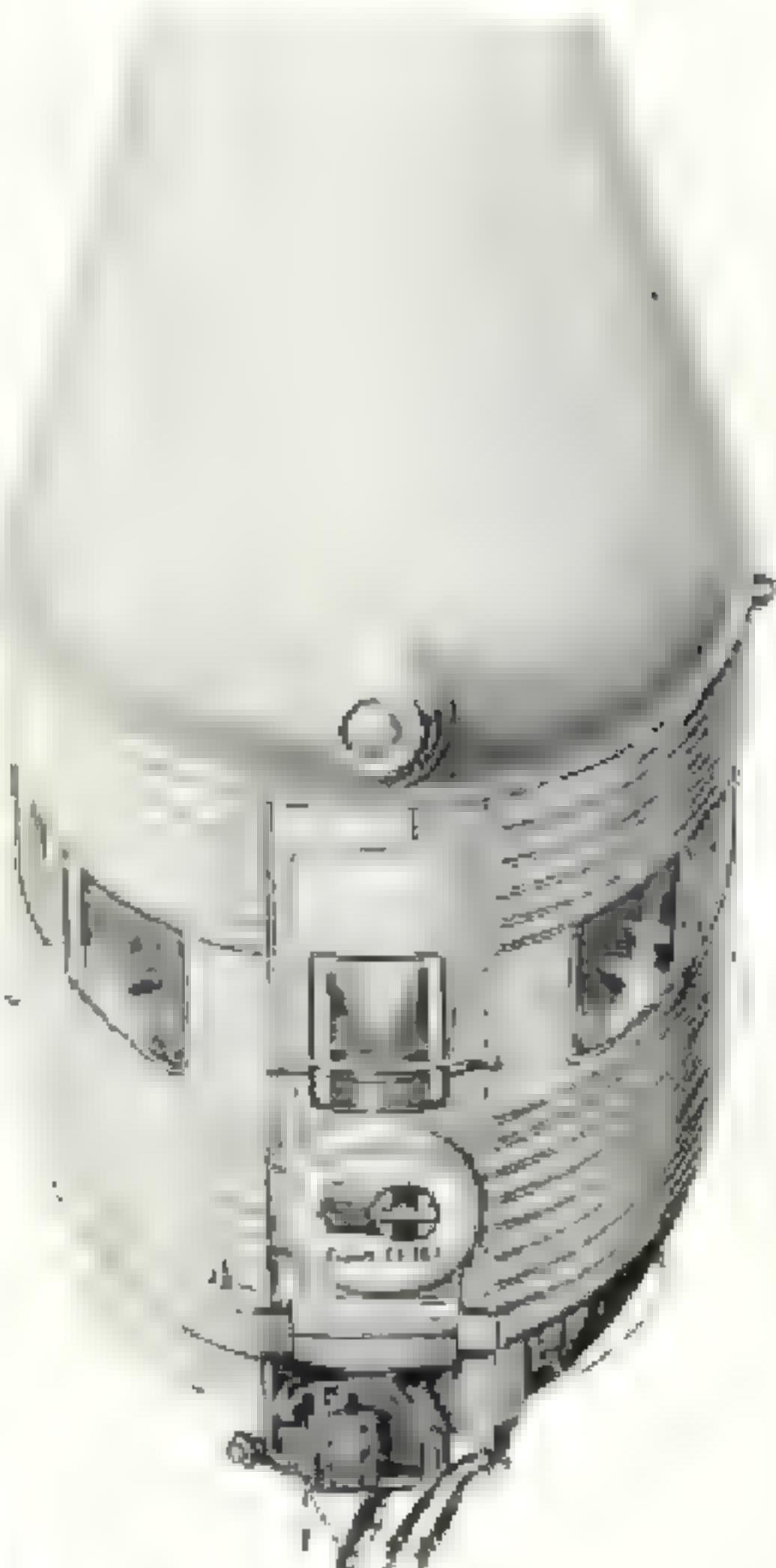
Admiral Electric Range

Admiral's unique built-in electric range
lets you have the best of both worlds.
Your built-in oven and refrigerator
are built right into your kitchen. You
get the convenience of built-in cooking
and built-in refrigeration. See it today
at your local appliance store or Admiral

Admiral
DUAL-TEMP
Refrigerators

Performance proven in over 200,000 kitchens.

**She came in
on the
*Super
Chief***



How else would she travel to and from California?

For the Super Chief is one of the most glamorous all-private-room trains in America, filled with people who know how to travel and appreciate the best in travel.

It serves those famous Fred Harvey meals.

It operates on a 39½ hour schedule between Chicago and Los Angeles. The Super Chief (now in daily service) is the flag-bearer of Santa Fe's fine fleet of Chicago-California trains.



SANTA FE SYSTEM LINES . . Serving the West and Southwest

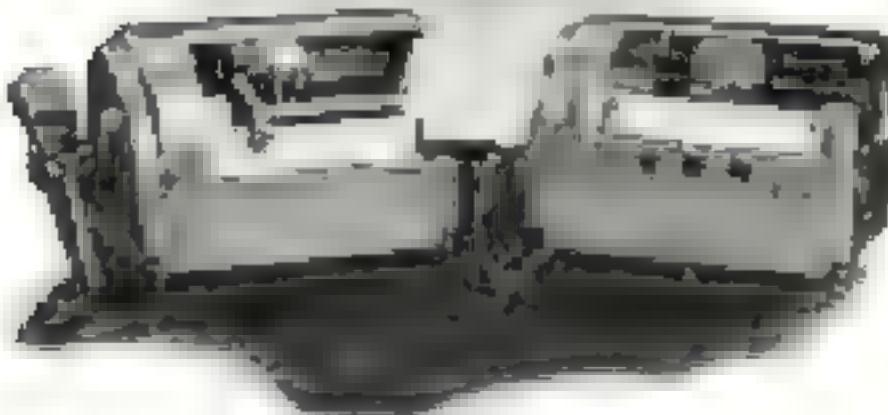
F. B. Gable, General Passenger Traffic Manager, Chicago 4

"Now we can relax— the Dictaphone Twins have arrived!"



His twin listens! The new electronic Dictaphone will be an instant success. It's reliable, accurate. Dictating has never been easier. And it's priced at the new "relaxation" price.

Now you can add a Dictaphone to your office equipment with recordless tape and tape.



DICTAPHONE Electronic Dictation

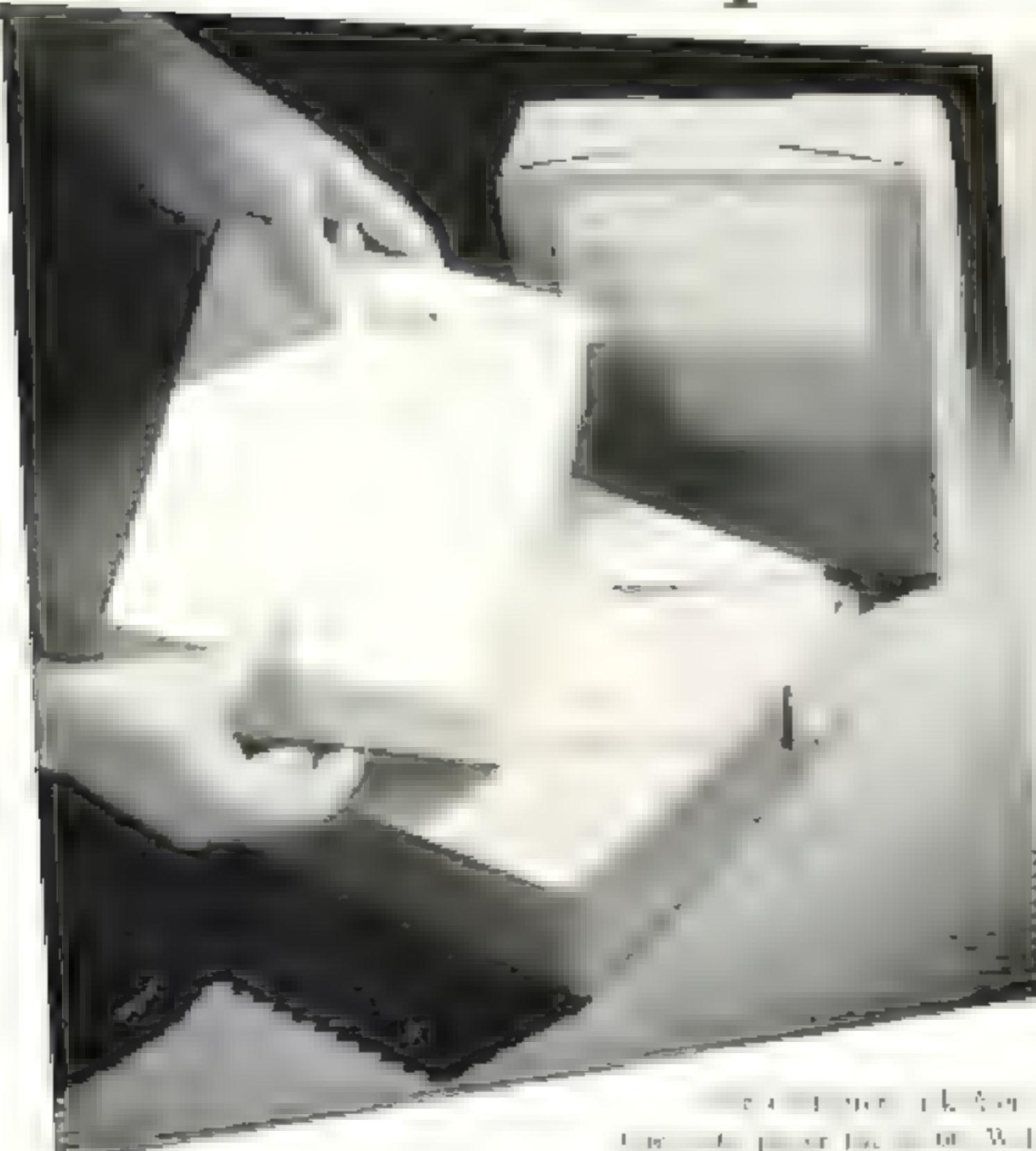
Howard D. Ladd, Vice President of Sales, Dictaphone Corporation,
200 Madison Avenue, New York, New York 10016
Telephone 212-633-1000, Telex 23-2000

What every office needs— the Dictaphone Twins

Call your local Dictaphone Dealer or write for a free, no-obligation demonstration and information.

<input type="checkbox"/> I am interested in the _____	1
<input type="checkbox"/> Dictaphone Model 1000 Series	1
<input type="checkbox"/> Dictaphone Model 2000 Series	1
<input type="checkbox"/> Dictaphone Model 3000 Series	1
Name _____	
Company _____	
Address _____	
City _____ State _____	

"STANDARD" PACKAGE
200 Note Sheets
100 Envelopes \$1⁰⁰
Printed with your
name and address



ALL
QUALITY
-- NO
FRILLS

For a Standard Package write or wire us for
our catalogues. We will send you the best
of all paper and stationery. Write to the
American Stationery Company, Peru, Indiana.

The Standard Package contains 200 fine
note sheets and 100 envelopes. It is made
of the best paper and is printed with
the name and address of the customer.
The Standard Package is a good buy for
anyone who wants to have a good
quality package at a reasonable price.
Our Standard Package is \$1.00 per
dozen. The cost of the paper and
envelopes is \$1.00 per dozen.

Our Standard Package includes
200 note sheets and 100 envelopes.
It is a good buy for anyone who
wants to have a good quality
package at a reasonable price.

THE AMERICAN STATIONERY COMPANY
300 PARK AVENUE, PERU, INDIANA

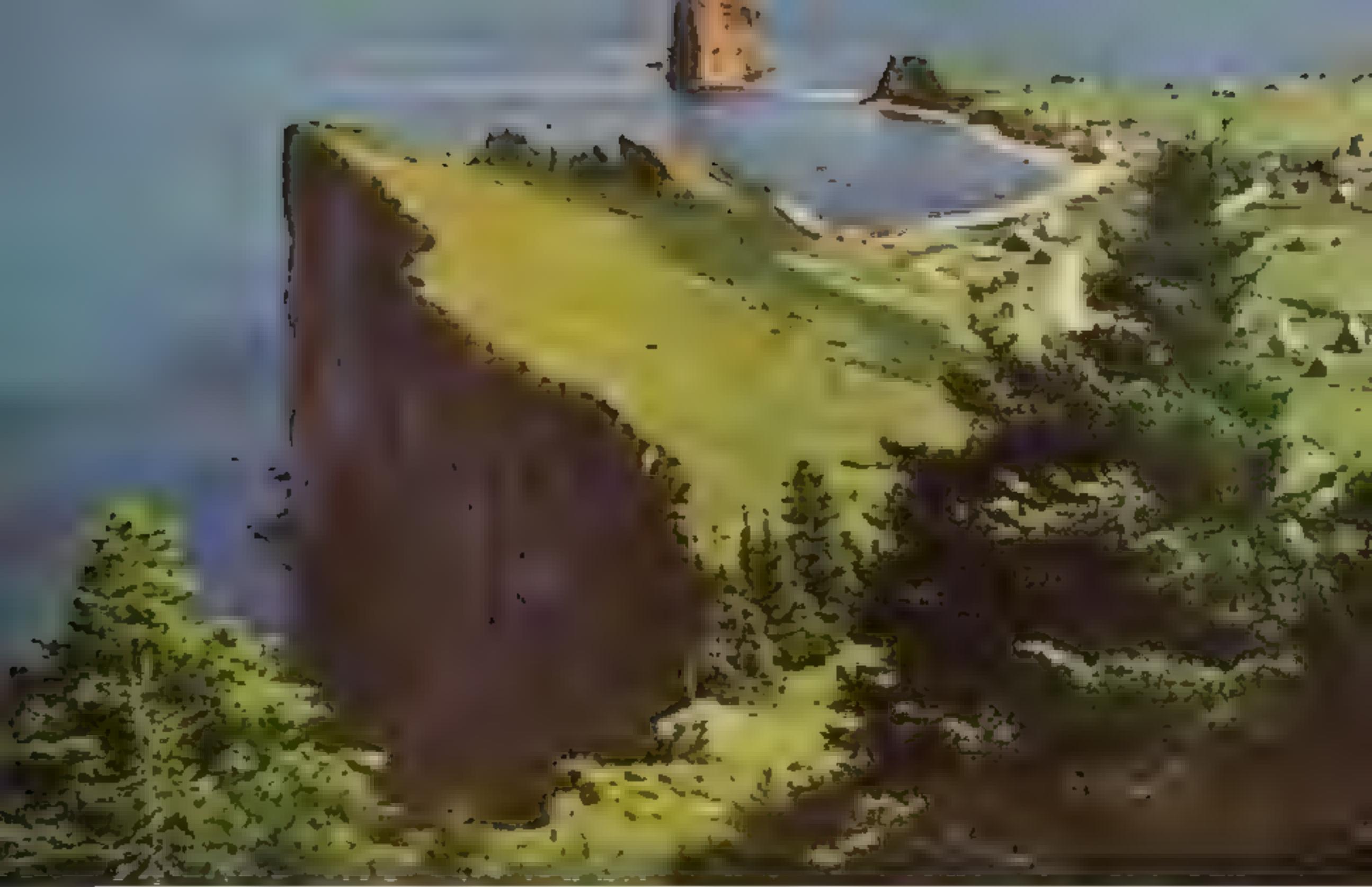
**DELUXE
PACKAGE**
200 Note Sheets
100 Envelopes
\$2⁰⁰

ENVELOPES
ONLY

100 Envelopes
\$1⁰⁰

**AMERICAN
STATIONERY**

"The Much for a Little"



To everywhere in Canada
go CANADIAN NATIONAL

The cities and towns and lakes
between village and frontier,
lumber camps and pine woods,
mines and fields, all offer
opportunities for travel and pleasure.
It is from Canada's great
ports that you can go
New York, Montreal and other
world centers in ease.



Go on comfort to every corner of Canada with the Canadian National Railways. In no other country is there better transportation. So good, so safe, so reliable. You have only to look at the map to see how far and how fast the West Indies, the Americas and Europe are from us.

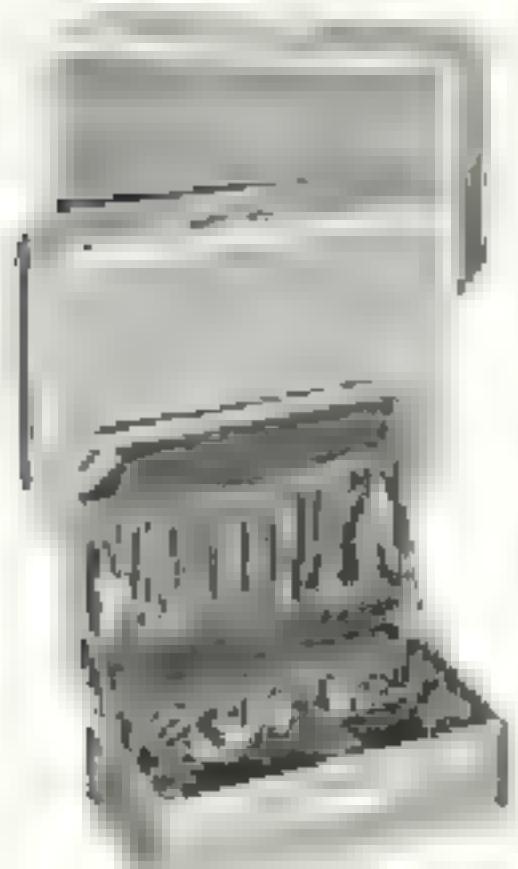
D. S. Crismon, president of the Canadian National Railways, says: "The Canadian National Railways is the best railway system in the world. It connects the great cities of Canada with the great cities of the United States. New York, Chicago, St. Louis, Minneapolis, San Francisco, Seattle, Vancouver, Victoria, and the great ports of the Pacific."



The Canadian Limited takes you to world famous Jasper Park, Lake Louise, the Canadian Rockies, Banff, Banff Springs, Montreal, Quebec, St. John, Newfoundland, Halifax, Nova Scotia, and the great mineral wealth of Western New York and elsewhere East, travel the coast of California, the southwest,


CANADIAN NATIONAL
THE RAILWAY TO EVERYWHERE IN CANADA

TRAVELERS' GUIDE TO THE BRITISH ISLES
A Handbook of Travel Information
for the British Isles



LUGGAGE

more time round the world.

AS YOU TRAVEL THROUGH

The British Isles

Famous British Railways carry you swiftly and comfortably to your appointments with the historic and scenic charm which is Britain's own. Whether on the Flying Scotsman, the Royal Scot, the Cumbrian Mountain or the Golden Arrow. For your cross-channel journeys to Ireland and the Continent avail yourself of the wide choice of routes provided by our own fleet of ferries. Enjoy your stay at any of our 43 rail and co-ordinated hotels.

For tickets, reservations and expert travel advice concerning the British Isles
CONSULT YOUR TRAVEL AGENT
or any of our offices.

NEW YORK 20, N.Y.—9 Rockefeller Plaza
CHICAGO 3, ILL.—29 So. LaSalle Street
LOS ANGELES 14, CAL.—310 West Sixth St.
TORONTO, ONT.—Canadian Pacific Building

Write Dept. M at any of above addresses for free, full-color map folder, "The British Isles." Mail—BRITAIN—HOST TO THE OLYMPICS



BRITISH RAILWAYS



...and so much more. For complete travel information, quality and style in travel products, and the best prices with the most up-to-date information, who know the British Isles better than the experts themselves? Consulting your travel agent or travel agency, repeat business will be your best guarantee. Every detail of transport from Scotland to Spain, it's all there. It's NOT a MUST, it's just a nice to have. TELL THEM.



AGED CHEESE

Aged cheese is the best cheese. It is the result of a long process of aging, which gives it its unique flavor and texture. The cheese is aged in a cool, dry place, usually in a cellar or a basement. The aging process can take anywhere from a few weeks to several months or even years. The longer the cheese is aged, the more complex and rich its flavor becomes. There are many different types of aged cheese, including Cheddar, Gouda, and Brie. Some aged cheeses are made with whole milk, while others are made with cream or buttermilk. Aged cheese is often served with crackers, bread, or fruit. It is also used in many recipes, such as soups, stews, and casseroles.

Aged cheese is a great way to add flavor to your meals.

Quality guaranteed. Order your orders now.

THE SWISS COLONY The Cheese Land
Menomonie, Wisconsin

In San Francisco

300 Rooms *
from \$2 - Single &
from \$5 - Double *

*
you are
welcome
& at &
the HOTEL
WHITCOMB

Karl C. Walot, President & General Manager

For those who
prefer a
smaller pen...



Demi-size a new Parker '51'... world's most wanted pen

New...jewel-like...the *demi-size* is a true "51" in everything but dimensions. Created especially for the man or woman who prefers a smaller pen.

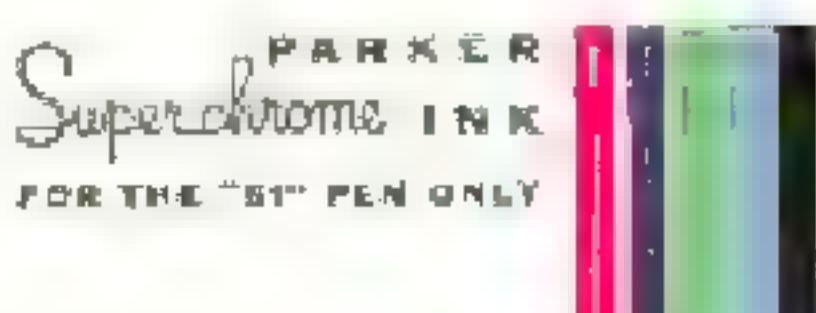
Less than 5 inches long, the *demi-size* Parker '51' clips neatly to a woman's handbag in an upright position. Fits even a man's shallow shirt pocket. To many hands, the compact, balanced design brings new comfort...greater flexibility.

Precision-made throughout, the *demi-size* offers a wide range of custom points. You choose the one that best brings out the full individuality of your

handwriting. For added color and character, you'll want to use new Parker *Superchrome* Ink. Created for use only in "51" Pens—this super brilliant, super-permanent ink actually *dries as it writes!*

See the new *demi-size* today. Choice of colors, \$12.50, \$15.00. Pencils, \$5.00, \$7.50. Matched Sets, \$17.50 to \$80.00. The Parker Pen Company, Janesville, Wis., U. S. A., and Toronto, Canada.

© 1951 The Parker Pen Co.



NEW! Wholey different—created by leading scientists. World's most brilliant permanent ink—and it *dries as it writes!* Choice of 5 colors. Matched sets only \$80.00.

NEVER REACH
SO HIGH TO SEE . . .

Visit Washington Now More Beautiful Than Ever



Then I am well pleased
To see you in Worcester,
And to have you prop-
erly to be made
With all the care and skill
That can be had; and
I will be glad to have
you come to me as
soon as you can.

and the rest of the day I was at
work. Then I came home
about noon. Mother had come
home from work. I told her
what I had done. She was
surprised and asked me
what I had done. I told her
about the boy. She said
she would go to the police
station and speak to the
police. I told her no. I
told her I would go to the
police station and speak to
the police.

— 7 —

The B&O is the Way to Go!

THE HISTORICAL AND LITERARY
EDITION OF THE EGYPTIAN BOOK OF THE DEAD.



FREE

**WASHINGTON
MAIL MAGAZINE**

卷之三

A screenshot of the Microsoft Word ribbon interface. The ribbon is a horizontal bar at the top of the application window, divided into several tabs: File, Home, Insert, Page Layout, References, Mailings, Review, and View. The 'Home' tab is currently selected, indicated by a dark grey background and a white font label. Below the ribbon, there are several rows of standard Microsoft Word toolbars and buttons, including the 'Clipboard' group, 'Font' group, 'Paragraph' group, and 'Text' group.

**BALTIMORE & OHIO
RAILROAD**

*See the sights through
WILLSONITES*



For Sports too—its
WILLSONITES



WILLSONITE



Another WILLSONITE
Estimated "Price" -
\$6.75

Sun Glasses

STYLES AT TOP

STYLES AT BOTTOM

Other world famous Sun-glasses by LISONITE Sun Glasses firm
1000-10,000-100,000-1,000,000

WILFRED MORRIS NC READING PA

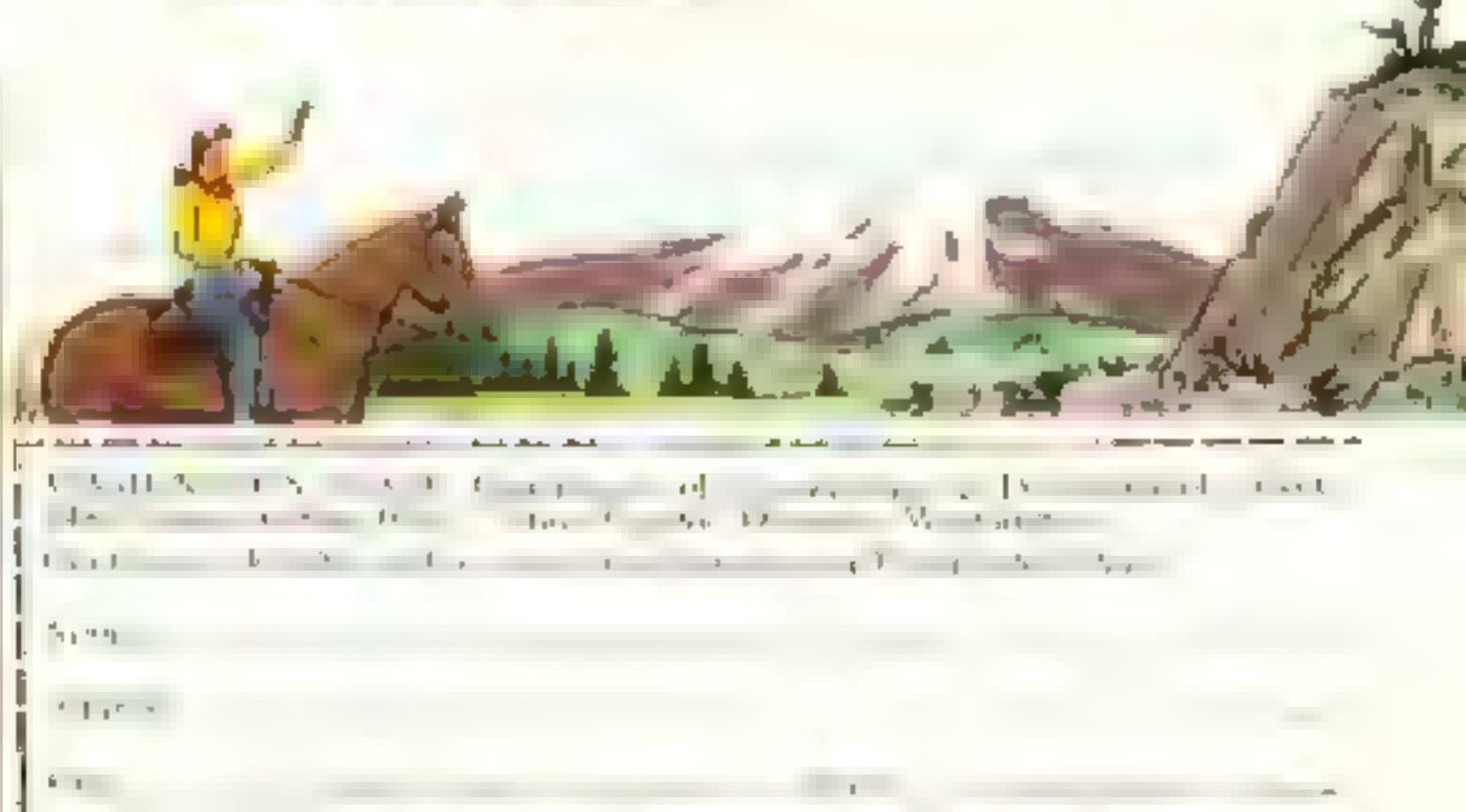


Left: Exploring the lush green forests of the Andes. Right: A couple of tourists examining a specimen found in the forest.



An Explorer's Paradise

Exploring the Ecuadorian Amazon is an adventure like no other. It is a land of unspoiled beauty and rich biodiversity. From the towering Andean peaks to the lush tropical rainforests, this region offers a unique blend of natural wonders. The Andes range, with its majestic snow-capped peaks, provides a stark contrast to the dense green forests below. The Amazon basin, on the other hand, is a lush green jungle teeming with life. The rivers and streams that flow through the region are home to a variety of unique species, including the Amazon river dolphin and the harpy eagle. The local culture is also a highlight of the region, with indigenous communities living in harmony with nature. Overall, the Ecuadorian Amazon is a true explorer's paradise, offering a wealth of natural beauty and cultural richness.



We met these "huskies"
near Ikpikpuk!



Why deny yourself ALASKA?

GO THIS YEAR to that fabled frontierland of Eskimos and totem poles, silent fjords and gleaming glaciers. Glide along the lake-smooth Inside Passage, up endless sides of emerald isles, past a parade of snow-capped peaks. We'll send facts and prices, arrange every last detail, take you to your Alaska-bound ship at Seattle on the streamlined

NORTH COAST LIMITED. If interested

in this Alaska trip by train and steamer,

just write E. E. Nelson, 313 Northern
Pacific Railway, St. Paul 1, Minn.

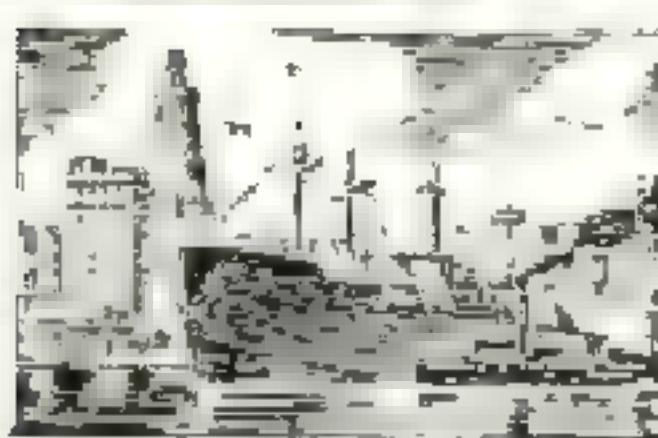
SEND FOR THIS
FREE BOOKLET



MAIN STREET OF THE NORTHWEST

FAVORIS

A Clean Mouth Means
A Fresh Pleasant Breath



Outstanding in com-
merce is this harbor on the Patapsco

Outstanding among hotels is the

Sheraton Belvedere

= BOTH = ARE = IN = BALTIMORE =

*FOR THOSE WHO CANNOT
OR SHOULD NOT CLIMB STAIRS



Sedgwick

motorized lift chairs
motorized reclining chairs
motorized reclining lift chairs
motorized reclining lift chairs
handicapped bath and
wheelchair accessible
furniture
and
accessories



Write for illustrated brochure

5100 8TH AVENUE MACHINE WORKS 137 W. 41ST NEW YORK

ELEVATORS - STAIRCHAIRS - STAIRLIFTS - STAIRCHAIRS

A hand is shown from the left side of the frame, holding a bunch of various colored socks (red, yellow, green, blue) by their toes. The background is a soft-focus green.

The **RIGHT** *Look*

You can't beat these for Looks
... for Fit . . . for WEAR.

Here are just a few of more
than a thousand different
INTERWOVEN Socks from
which to choose.

Whoever you are . . . whatever
you do . . . wherever you go . . .
there is an INTERWOVEN Sock
for every walk in life.

INTERWOVEN SOCKS®

Look NEW Longer

Safest to Buy . . . They
WEAR . . . They hold
their shape . . . They
retain their bright
coloring.

SEVEN WORLD TRADE ROUTES



VIA GULF PORTS AND LYKES

LIKES fast, modern C-type cargo vehicles are regularly scheduled over six major world trade routes, from and to United States Gulf ports.

Exporters and importers in mid-Continent and Southern States—the great productive areas of mid-America—have the United States Gulf as their natural, helical gateway to world markets. For advantages, economical routing, and for dependable, experienced ocean transportation, specify VIA GULF PORTS AND LINES.

Every Lykes vessel flies the American flag; each is a part of your Merchant Marine—your country's lifeline of world trade and commerce.

**LIMITED NUMBER OF COMPENSABLE, INDIVIDUAL
PASSENGER ACCOMMODATIONS AVAILABLE**

*Please see the folder, "Liber Lines and Gulf Ports,"
address Liber Lines, Brotherhood Line, Dept. G,
New Orleans, La.*

American Flag  Trade Routes

**U. S. Line - From Tampa, New Orleans and
U. S. West Gulf ports to England, Scotland,
(Ireland) and Wales.**

CONTINENT LINE—From Tampa, New Orleans and U.S. West Gulf ports to Continental Europe and Scandinavia.

MEDITERRANEAN LINE—From U.S. Gulf and South Atlantic ports to Mediterranean and Black Sea ports.

AFRICA LINE—From U.S. Gulf ports to South and East Africa.

ORIENT LINE—From U.S. Gulf ports to the Far East.

CARIBBEAN LINE—From U.S. West Gulf ports to Cuba, Haiti, Puerto Rico, Dominican Rep.

**10. GINGER, RUM, PINEAPPLE, MANGOES, etc.
public, Venezuela, East Coast of Colombia and
Canal Zone.**

Lykes Bros. Steamship Co., Inc.

OFFICES AT NEW ORLEANS, HOUSTON, GALVESTON,
NEW YORK, BALTIMORE, BIRMINGHAM, CHICAGO, CORPUS
CHRISTI, DALLAS, GULFPORT, KANSAS CITY, LOUISIANA,
MEMPHIS, MILWAUKEE, MOBILE, PORT ARTHUR, ST. LOUIS,
TAMPA, WASHINGTON, D. C.
OFFICES ALSO LOCATED IN PRINCIPAL MOUNTAIN TOWNS

DEFENCES AND RESISTANCE IN PRINCIPAL STATE FORMS



TARRY IN *Tarheelia!*

Where can I go to get a refund, and how do I file from Canada to get a refund? I have a lot of questions.

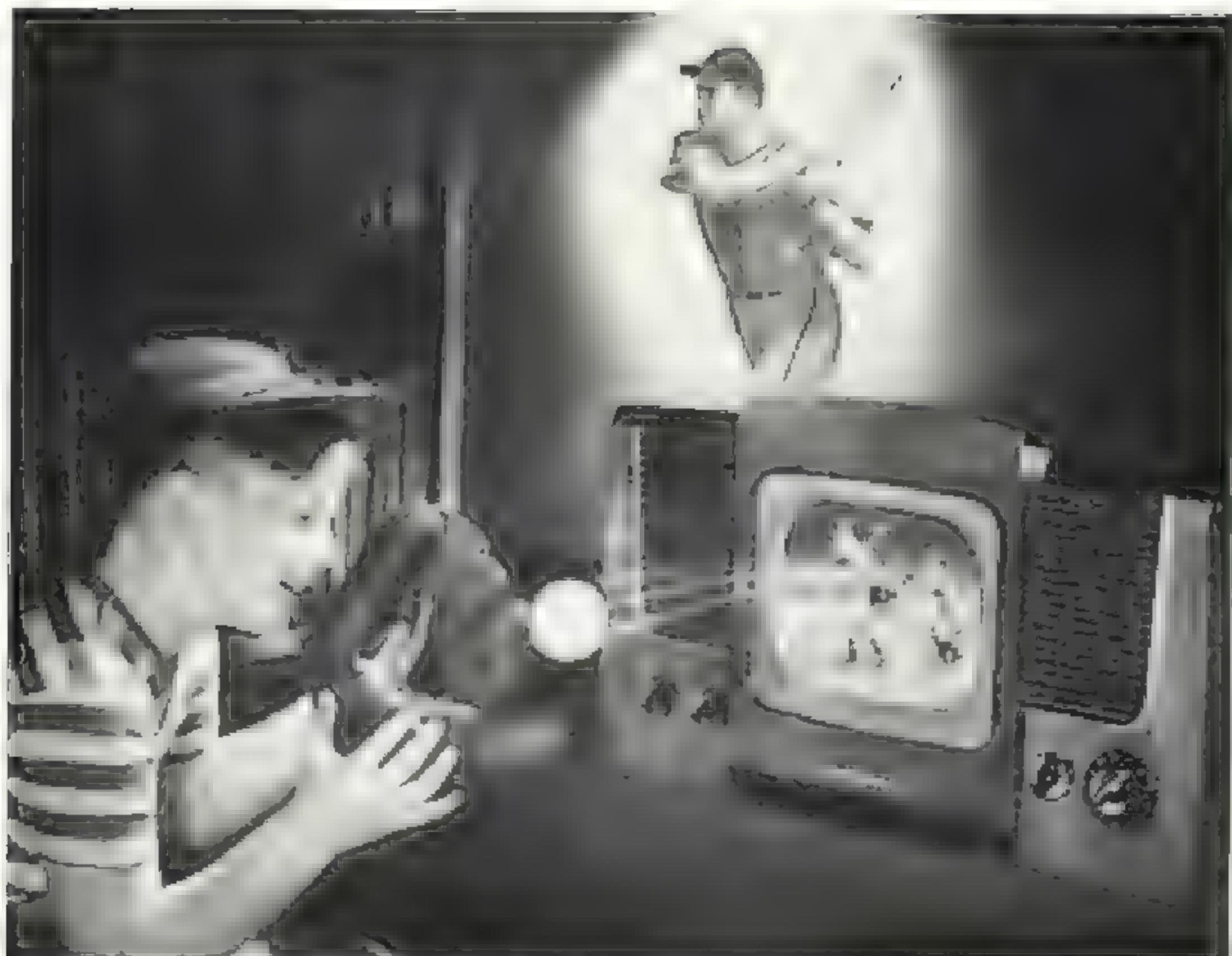
Expose the fish to sun and heat until
to pink, red, or golden brown. Add the
milk and breads for fighting blue and clean-
ing base . . . the Institute for market, sea
lions, trout, and salmon.

Bring the Whole Family. Enjoy Tatchein's
calm inland waters, perfect for boating
with children, picnics, or taking wild river plants
home. Water is never bottled by companies

Palmer, who was serving playwright Ben Jonson's apprenticeship at the Honourable Artillery Company's Theatre.

Want to know how to reduce your heated money? The booklet of Canada Tariffbook Volume 1 contains information enabling you to lower your taxes to suit your needs, and your expenses to suit your budget.

North Carolina



Document released under the Access to Information Act

You're right in the game—with Television

**George Washington University
and Georgetown University Report
on the USSR [1932]**

The one television show I hope
needs to be A *Family Matters*. All
the parents were the crack of
but against all of every step of
testified that they had been through it as
a full year, constant wandering [and]
and I hearings.

At the ball park. RCA Image
Definition telephone—answering

stalling the human eye by sensitivity of "vision"—get all the action in out-of-focus goons. Shift from over-all view of society, to "the people" are swift and revealing . . .

And all the time you
BLAINE, Day, Wallace, were
fascinated by your brighter
days, and you, like the
boy that the master classes of
you can hardly have expected
had every bright

Today, because of the original and continuing work of RCA
and its many millions of customers,
radio entertainment, education
and news services are available
everywhere. Results that RCA's Laboratories — always a "step ahead" —
helped to bring about are marked
RCA or RCA Victor.

—*King John* (1199-1216) — King of England from 1199 until his death in 1216. He was the son of King Henry II and Queen Eleanor of Aquitaine. He was born in 1166 at Gisors, Normandy, France. He was the third son of King Henry II and Queen Eleanor of Aquitaine. He was the third son of King Henry II and Queen Eleanor of Aquitaine. He was the third son of King Henry II and Queen Eleanor of Aquitaine.



RADIO CORPORATION of AMERICA

**it's Centennial year
in Wonderful
WISCONSIN**

Lore of ad-
ventures led
them on
discovery of
the thrilling
outdoor won-
derland that is
Wisconsin.
Now, still, you
spend time with
each other.



This is the year to seek vacation adventure in *Wonderful Wisconsin*. Test your fishing prowess on 7,340 lakes, 1,000 miles of streams. Motor its network of fine highways. Swim, hike, golf, dance...enjoy your kind of vacation. View Wisconsin's present and past—see historic Centennial celebrations, Indian ceremonials, colorful pageants. Accommodation to every taste and budget. Come and have a memorable vacation.

Wisconsin State Parks
and State Forests
are open to all visitors
from April 1 to October 1.

Send for Free Booklet

WISCONSIN CONSERVATION DEPT
Reservoir and Game Div., State Office Bldg
P.O. Box 73, Madison 2, Wisconsin



NAME _____

ADDRESS _____

CITY _____ STATE _____

RWAY
HOME FURNITURE



for gracious living

NORTHERN FURNITURE COMPANY
MAKERS OF THE FINE AND DURABLE HOME FURNITURE

4200 N. KEEFER AVENUE • MILWAUKEE 11, WISCONSIN
Milwaukee, St. Paul, Minneapolis, Chicago, Milwaukee, St. Louis, Cleveland, Pittsburgh
SOLD THROUGH AUTHORIZED DEALERS ONLY

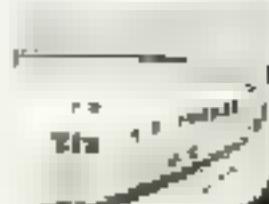
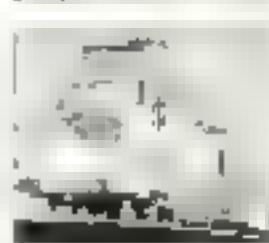
From the Alps
From the Riviera
From the Channel
From the Pyrenees



The best way to travel is by rail.
French Railroads offer a
France with their superb modern
equipment in over 12,000 cars
and trains.

The New York office of the French Na-
tional Railroads offers to travel agents
and tourists a complete list of train
and motor coach tours of France.

French railroads offer the following rail
tickets from any French port or from
Paris to all ports of France and Europe:
610 FIFTH AVENUE • Circle 7-5390

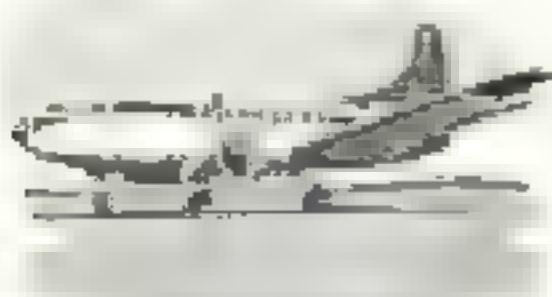


Air More Power to U.S.A.!

PARTNERS! Air power is power partners! With aircraft and engines from America's aircraft manufacturers, you can profit from the power of flight. Let the USAF help you build your business.

FASCINATING FIELDS

Now being opened by the USAF: Helicopters, rocketry, space travel, precision target aircraft, supersonic transports, and the concepts of forward-looking aircraft technology. AAF recruiting offices.



NORTHWEST ORDERS MORE!

Efficient and profitable have been Northwest Airlines' flying record and now that Northwest has ordered 14 more Boeing 727's, the total 20-22's will be incorporated into the Northwest Northwest's fleet of 25 high-speed Boeing 727's.

BIG AND LITTLE

After a year of intense competition between the Boeing and Convair 880, the Boeing 727 has emerged as the most popular jet aircraft. It is the most popular cabin and cargo aircraft ever produced. And it is the most popular aircraft for military transport and electronic warfare.

AN INTERNATIONAL INSTITUTION

MANUFACTURERS OF: Missiles (missile division) • Martin-Chemring Sensors • Martin 2-0-2 engines • Advanced military aircraft • Aerial gun barrels. **DEVELOPERS OF:** Rotary wing aircraft (Martin Rotowings Division) • Martin fuel tanks (licensed to U.S. Rubber Co.) • Honeycomb composites (international licensed to U.S. Plywood Corp.) • Stratovision satellite re-broadcasting (in conjunction with Westinghouse Electric Corp.) **LEADERS IN RESEARCH** to give the peace and build better living in far-reaching fields.



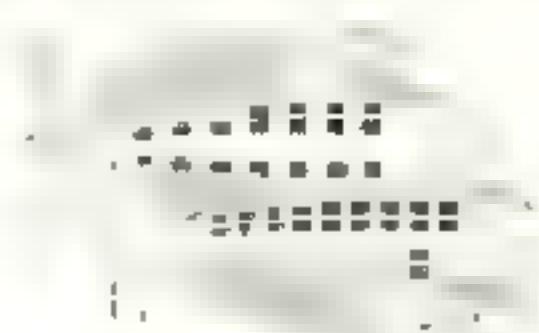
FORERUNNER

...of today's Martin aircraft is the original B-10 Bomber. Known as "Martin's Baby," it was the first American aircraft to fly over 100 miles per hour. It was operating in 1917, preceding the first World War.



AIR POWER SUPREME!

The Congressional Aviation Policy Board agrees. The world is in the age of atomic bombs, of intercontinental ballistic missiles, and of space exploration. But there is one last kind of power that is supreme.



HERE'S THE PAY-OFF FOR AIRLINES!

More than 200 passengers daily would be saved if the power of flight were used more frequently. More power, more speed, and more frequent flights could mean greater profits for the airlines. That's why we're giving health to the nation. The Boeing Company, Seattle, Washington 98103, Maryland.

Martin
AIRCRAFT

Builders of Dependable



Quality Aircraft

Air Power to Save the Peace -- Air Transport to Serve It



Your welcome is assured—
when you carry
NATIONAL CITY BANK
TRAVELERS CHECKS

You are not a stranger anywhere when you present National City Bank Travelers Checks. For the name of "America's Greatest World-Wide Bank" identifies you immediately as a traveler of experience and foresight.

And whether your luggage is marked for Athens, Greece—or Albany, N. Y.—for Cape Town, Canberra, Vancouver, Valparaiso, London or Los Angeles—your travel funds will be safe, as well as spendable like cash... if your traveler's checks carry the name of "The National City Bank of New York."

In case of loss or theft you get a prompt refund. In denominations of \$10, \$20, \$50 and \$100. Cost 75¢ per \$100. Ask for them at your bank.

**NATIONAL CITY BANK
TRAVELERS CHECKS**



**BACKED BY AMERICA'S GREATEST
WORLD-WIDE BANK**

第1部分 一、单本教材的编写与教材的组织形式

Never Before
SO MUCH for SO LITTLE
\$5,000 to \$25,000

**Invitations to Everywhere
By Air, Land or Water**

Please for accidental death and ex-
posure for all forms of injuries during
any travel pleasure trip.

\$5,000 for 1 week costs only \$2.00

Travelers Protection - The Best Trip

ASK ANY TRAVEL AGENT OR MAIL COMPANY

CONTINENTAL CASUALTY COMPANY

On your S.P. trip
to California

a See twice as much
for the same rail fare



However, the most significant aspect of the study is the
identification of the specific requirements of the ESRs in
relation to their professional development and how they
are being met by the institution.

As a result, I believe that the future for Vaygach's
Sov. Fleet will be one of increasing dependence
on the naval fleet of the Soviet Union, which has
the ability to conduct such operations.

FOUR SCENIC ROUTES TO THE WEST



—
—
—

S.P.

The friendly
Southern Pacific

CHICAGO and COLORADO are just a restful ride apart



on the famous

Rocky Mountain Rocket

Days of the week
Chicago - Denver
Mon. 10:30 a.m.
Tues. 10:30 a.m.
Wed. 10:30 a.m.
Thurs. 10:30 a.m.
Fri. 10:30 a.m.
Sat. 10:30 a.m.
Sun. 10:30 a.m.

Days of the week
Denver - Chicago
Mon. 10:30 a.m.
Tues. 10:30 a.m.
Wed. 10:30 a.m.
Thurs. 10:30 a.m.
Fri. 10:30 a.m.
Sat. 10:30 a.m.
Sun. 10:30 a.m.

Days of the week
Chicago - Denver
Mon. 10:30 a.m.
Tues. 10:30 a.m.
Wed. 10:30 a.m.
Thurs. 10:30 a.m.
Fri. 10:30 a.m.
Sat. 10:30 a.m.
Sun. 10:30 a.m.

Just your money back if you
haven't been to Colorado
in either 1940, 1941, 1942,
or 1943. Purchase from Rock Island
Railroad when Chicago to



The Rock Island
Passenger Program

ROCK ISLAND LINES

Protect your money when
you travel!



ALWAYS CARRY

BANK of AMERICA TRAVELER'S CHEQUES

Acceptable everywhere as identifying
Backed by the resources of a five billion
dollar bank. Sold by banks and travel
agents everywhere. Issued by

BANK OF AMERICA CALIFORNIA

Los Angeles • San Francisco
New York • Boston • Atlanta • Chicago



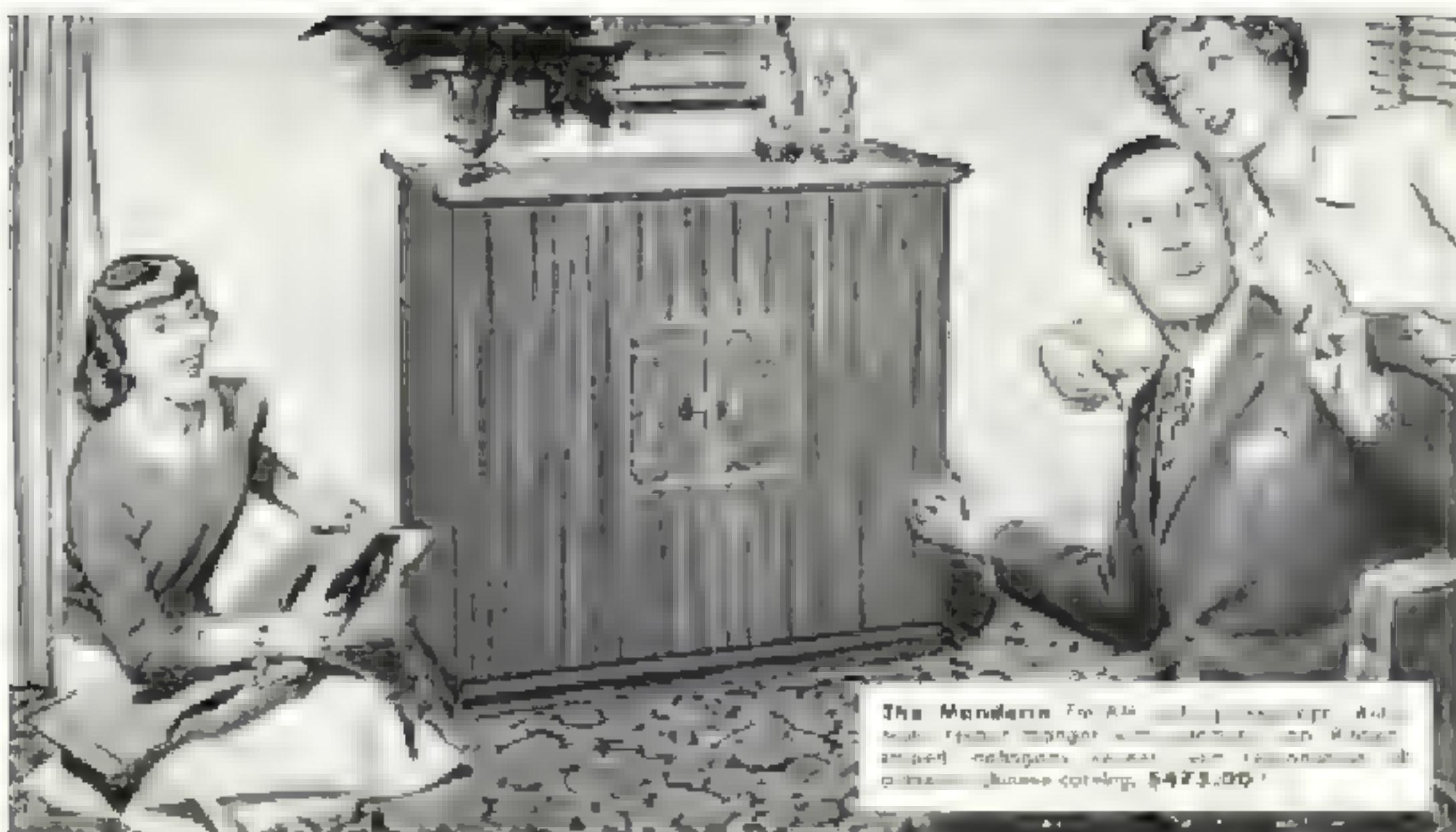
A feather in your hand . . .

A sharp, brilliant image to your eyes . . .

Pick up a new pair of Bausch & Lomb Glasses. They're thin, sleek, easily light-weight,
folded in your hand. You'll see an
image of incomparable brightness and
sharpness at once. Write for new free
48-page booklet, "How to See Better,"
from Bausch & Lomb, Optical Co., Inc., 100
Genesee Street, Rochester, N.Y.

BAUSCH & LOMB

OPTICAL COMPANY



The Mandarin Top AM radio-phonograph with built-in record changer — 100% American made — \$475.00.

How Mother persuaded Dad to do what he wanted!



"STOP!" cried Dad, when I mentioned a new radio. "Our old one still works, doesn't it?" But Mother and I thought we saw a twinkle in his eyes. Perhaps he might be tempted! So one sunny morning we had maneuvered him to a Stromberg-Carlson display.

"LOOK!" Mother exclaimed. "What lovely cabinets! There's a fine piece that seems just made for our living room." (Mother knows Dad has an architect's soft spot for good design.)



"LISTEN!" Dad called out as we played one of his favorites, a record of the Sextette from Lucia. "You can hear every note clear as life—it's like being



right at the operah!" From then on, Dad had the time of his life with Stromberg-Carlson's out-of-this-world FM-AM radio, and record player. "Wrap it up," he said, "exactly what I've always wanted."

See the difference... hear the difference in your choice of authentic period cabinets. In his past and true-to-life tonal richness.

Your Stromberg-Carlson dealer—listed in the classified pages of your phone book—will be glad to demonstrate the benefits you get from Stromberg-Carlson's unique 24 years of experience in sound reproduction.

Radio-phonograph consoles: \$199.50 to \$625.00. Table models from \$14.95. Telephones: \$499.00 to \$1195.00. (All prices slightly higher in South and West.)

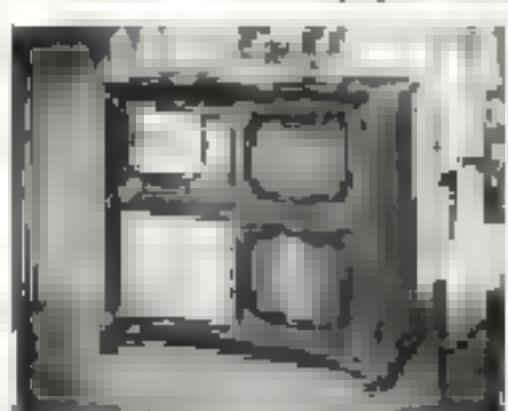
STOP!... LOOK!... and LISTEN!... THERE IS NOTHING FINEER THAN A

STROMBERG-CARLSON

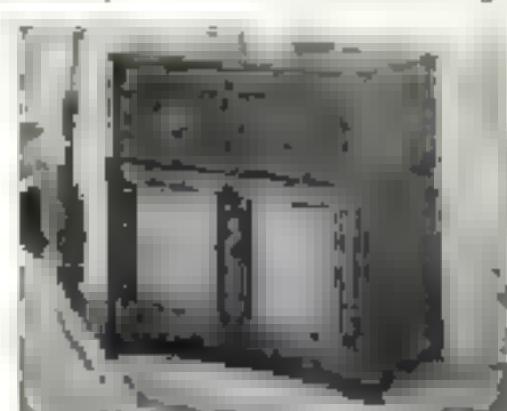
© 1941 Stromberg-Carlson Company, Rochester 3, N.Y. — In Canada, Stromberg-Carlson Co., Ltd., Toronto
Radios, Radio-phonographs, FM, Telephones • Sound Equipment — Radio City, Intercom and Station Systems • Telephones — 26 telephone



The Heppenwhite FM-AM radio-phonograph. Automatic record changer. Authentic 18th century design in hand-carved mahogany wood. \$395.00



The Washington radio-phonograph with 100% American made cabinet in mahogany. In its normal orientation, you'll swear \$1195.



The Mayflower FM-AM radio-phonograph. Automatic record changer. 100% American cabinet in hand-carved mahogany wood. \$375.00



The Dynamic radio-phonograph with built-in power and feed tubes. American cabinet in brown \$345.00, in mahogany \$375.00

New Way to Own AN AMAZING New Hearing Aid!

- Comes to you by mail
- Satisfaction Guaranteed
Or Your Money Back
- Just Clip Coupon Below



So good we can offer you this
MONEY-BACK TRIAL!

Want the Zenith "75" at home, at work, anywhere. If it isn't better than you ever dreamed ANY hearing aid could be, return it within 10 days of receipt and Zenith will refund your money in full.

Surely you over \$100, too! Elsewhere the new Zenith "75" would cost \$125.00. But because you're buying direct from the manufacturer of all hearing aids presented, A. S. Zenith, you save \$25.00 on the Zenith "75". The price paid to an audio company adds to the costs and prevents the high quality hearing aid from being sold for less than \$125. Instead of \$75. You can start using the Zenith "75" right away. Find new interests and hobbies by visiting the catalog below-right now!

BY THE MAKERS OF THE WORLD-FAMOUS ZENITH RADIOS

Mail coupon today
or call or go post office and buy hearing aid



MAIL THIS COUPON TODAY—

Zenith Radio Corporation
Dividing A Division 100-1000 N.W.H.
5000 Lincoln Avenue Chicago 34, Illinois

Send me the new Zenith "75" for \$75.00 for inspection. Hearing Aid Trial Period—no obligations, no returns after trial period. I understand that I may cancel my trial period or pay the full amount of \$125.00 plus shipping and handling if I keep the Zenith "75" for 10 days. Please send me free descriptive booklet.

Name _____

Address _____

City _____

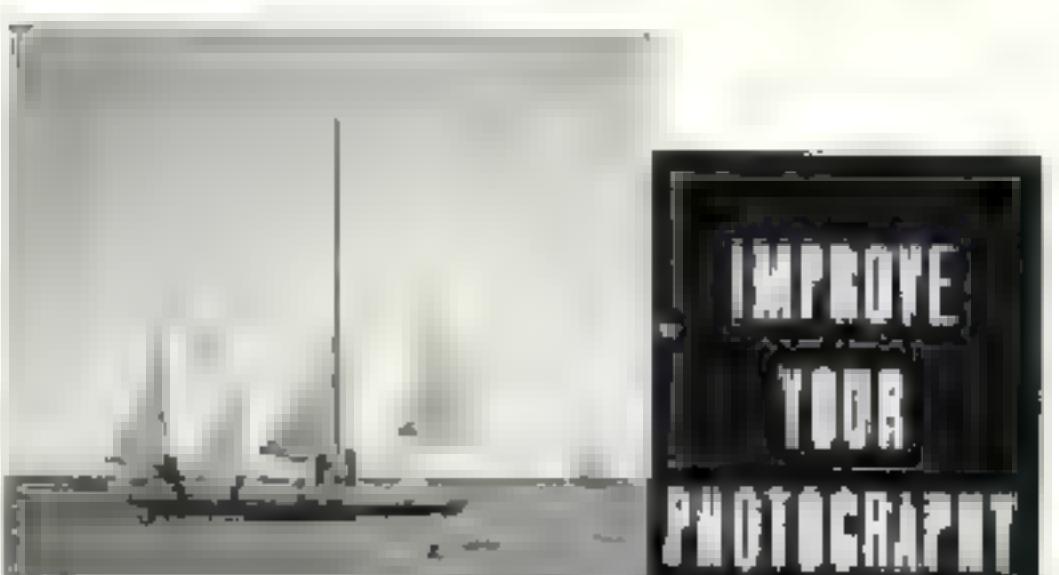
State _____



Wide choice of packages for independent trips—by land or sea. Or get the many touring trips offered by the Canadian Line.
NIAGARA to the **SAGUENAY**—the most scenic part of this world famous waterway. Highlights include Niagara Falls, the Grand Trunk, the Richelieu, the Beauport, the Magog, the Bay of the **GREAT LAKES CRUISES**—the Thousand Islands, Lake Ontario, Lake Erie, Lake Superior, the St. Lawrence, the Great Lakes, the Great Northwest!

CANADA STEAMSHIP LINES

Offices in Principal Cities, or Your Travel Agent



WILLIAM WOLLENSAK INC.

1000 PARK AVENUE NEW YORK 22

CALIFORNIA OFFICES: LOS ANGELES

SAFETY FILM, SAFETY FILM

FLASH FILM, SAFETY FILM



Salmon Peggy's Cove, Nova Scotia

Foreign Flavour - IN A FRIENDLY LAND

The London Market

You'll notice subtle differences that tell you you're "abroad".

The unspoiled spaciousness of Canada's woodlands and National Parks.

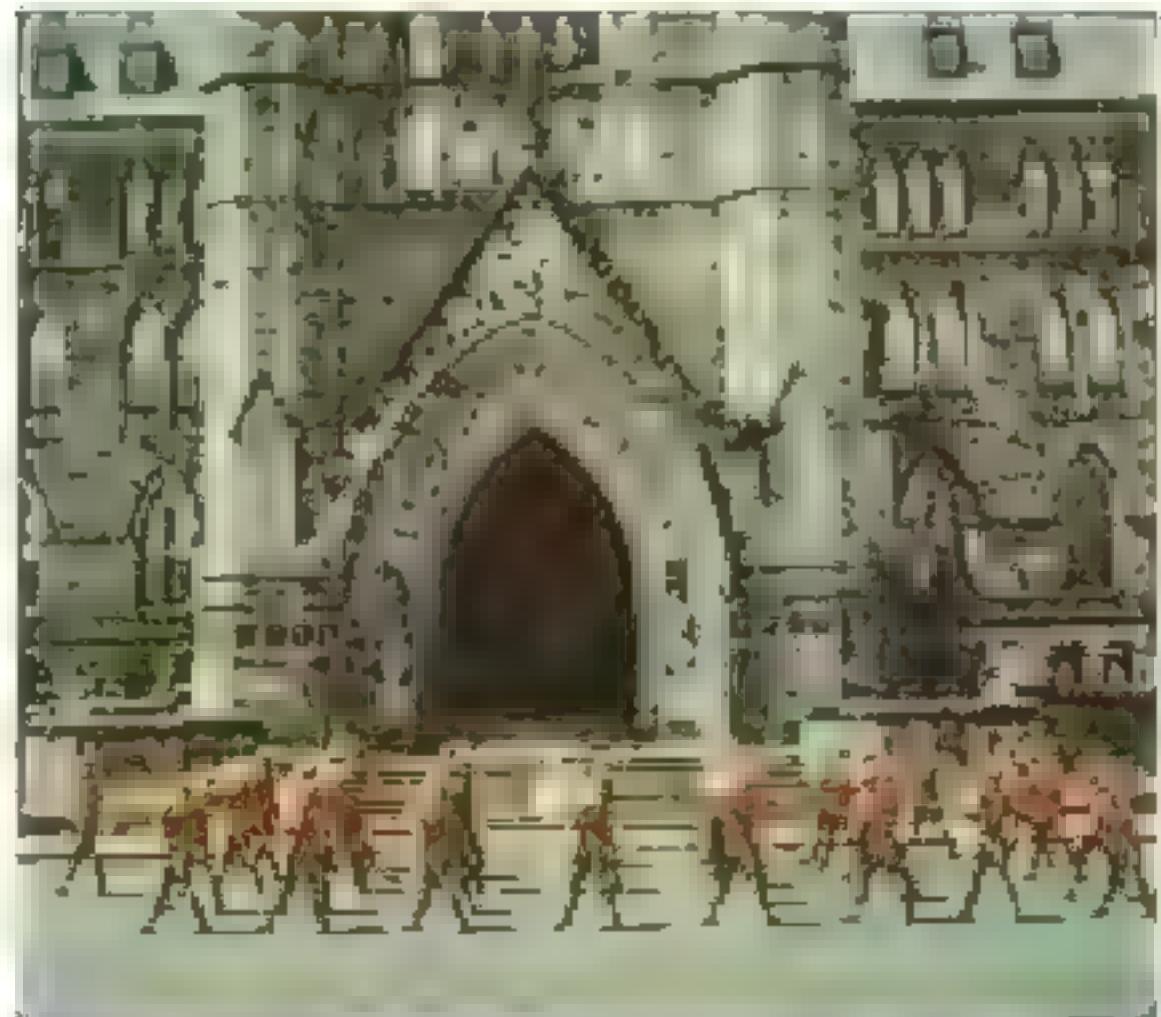
The gracious, ancient cities of the older provinces. Local dishes. Native crafts. Even the way your vacation dollar buys more ...

Yet you're never a stranger, always a guest. Joining in the gay life of some summer colony, doing the city sights, touring scenic vacationlands ... you'll find friends ... make friends ... look forward to the time when you can come again. For illustrated literature, write:

Canadian Government Travel Bureau, Department of
Trade & Commerce, Ottawa 1, Canada

R. Hon. C. D. HOWE Minister

D. REG. GOVERNMENT DIRECTOR



Red-coated "Mounties" march past Ottawa's Peace Tower.

CANADIAN GOVERNMENT TRAVEL BUREAU
OTTAWA CANADA

Please send me your illustrated book,
Canada, Vacations Unlimited. Please Print. Z-403

Name _____

Street and No. _____

Town _____

State _____

CANADA

Vacations Unlimited

NO PASSPORT NEEDED

GOOD SEATS... GOOD SEEING!



AO CALOBAR *Sun Glasses*



Wherever you go you can depend on AO Calobar Sun Glasses to see you through in comfort...in style.

- A base curve, optically ground and polished Calobar lenses minimize back reflection. Scientific decentering protects your eyes from fatigues and discomfort caused by non-decentered sun glass lenses.
- Special formulation of the lenses guards your eyes against harmful ultraviolet (sunburn) and infrared (heat) rays.
- Backed by American Optical Company's 115 years of ophthalmic experience, AO Calobar Sun Glasses assure you the utmost in protection and ophthalmic excellence.
- Available only through those who render professional or technical ophthalmic services.

American  Optical
COMPANY

the perfect gift
FOR THE NEW
GRADUATE

The Best Handy-Sized Dictionary

Webster's Collegiate
is based on The New
Second Authority - Webster's New International
Dictionary, Second Edition. Definitions are word
of common daily use. Over
110,000 entries, 1,300
technical words and
definitions in each, tabulated
and indexed. From
\$5 to \$10. At your bookseller
or stationer.

© N. C. MERRIAM CO.
Springfield 2 Mass.

WEBSTER'S COLLEGIALE
A Merriam-Webster

THIS YEAR
Enjoy
A HEALTH PACKED
VACATION IN CANADA'S
VACATION PROVINCE
Ontario

Clear sunny weather urges you to make rich or brief
where Ontario & makes life off the beaten track - come
over to rustic cabin.

Easy border crossing and you do not go a long way

Ontario Department of Travel & Publicity,
414, Parliament Buildings, Toronto 2, Ontario

Please send me the pamphlet "Ontario Your Best Vacation
By Road Map, and "Where to Stay in Ontario."

Name _____

Address _____

City _____

State _____

General Electric's 2-Door Combination Refrigerator-Home Freezer

Here's something brand-new and exciting in refrigerators



It's a completely refrigerated and separately insulated Home Freezer with its own separate door.

ZERO STORAGE: (Zero) is a special compartment for quick freezing food, and because it has a separate low storage area of its own, it will hold 5½ pounds of deep-freeze. You can use it whenever you want.

The Zero-storage Compartment can keep frozen foods up to 12 months. The following "timetable" shows recommended storage periods for maintaining high quality of all frozen vegetables, fruits, and meats:

B... up to 12 months. 19% up to 1 month
D... up to 3 months. 20% 1 to 2 weeks



You get all the wonderful advantages of a 2-door refrigerator plus famous General Electric dependability

IT'S a new, better way to store food. You also get the added convenience of efficiency in economy that you can't find in any other "two-door" type refrigerator.

Each of the compartments is completely segregated so you're never disturbed.

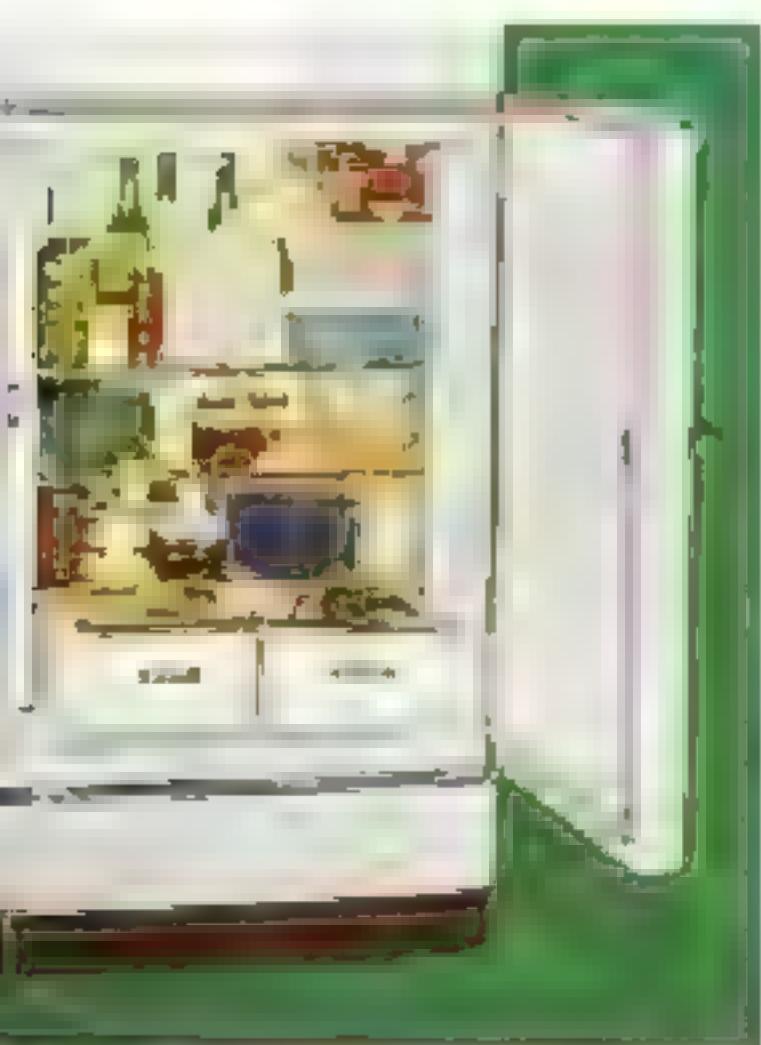
You don't have to cold in the freezer when you open the refrigerator.

You don't waste cold air in the refrigerator when you open the freezer.

And, most important of all, this great, new refrigerator is equipped with the famous General Electric sealed-in refrigerating system—quiet, bright and unexcelled for dependable performance.

See your General Electric dealer's and look at this truly new, really different, cooler existing today.

General Electric Company, Bridgeport 2, Connecticut



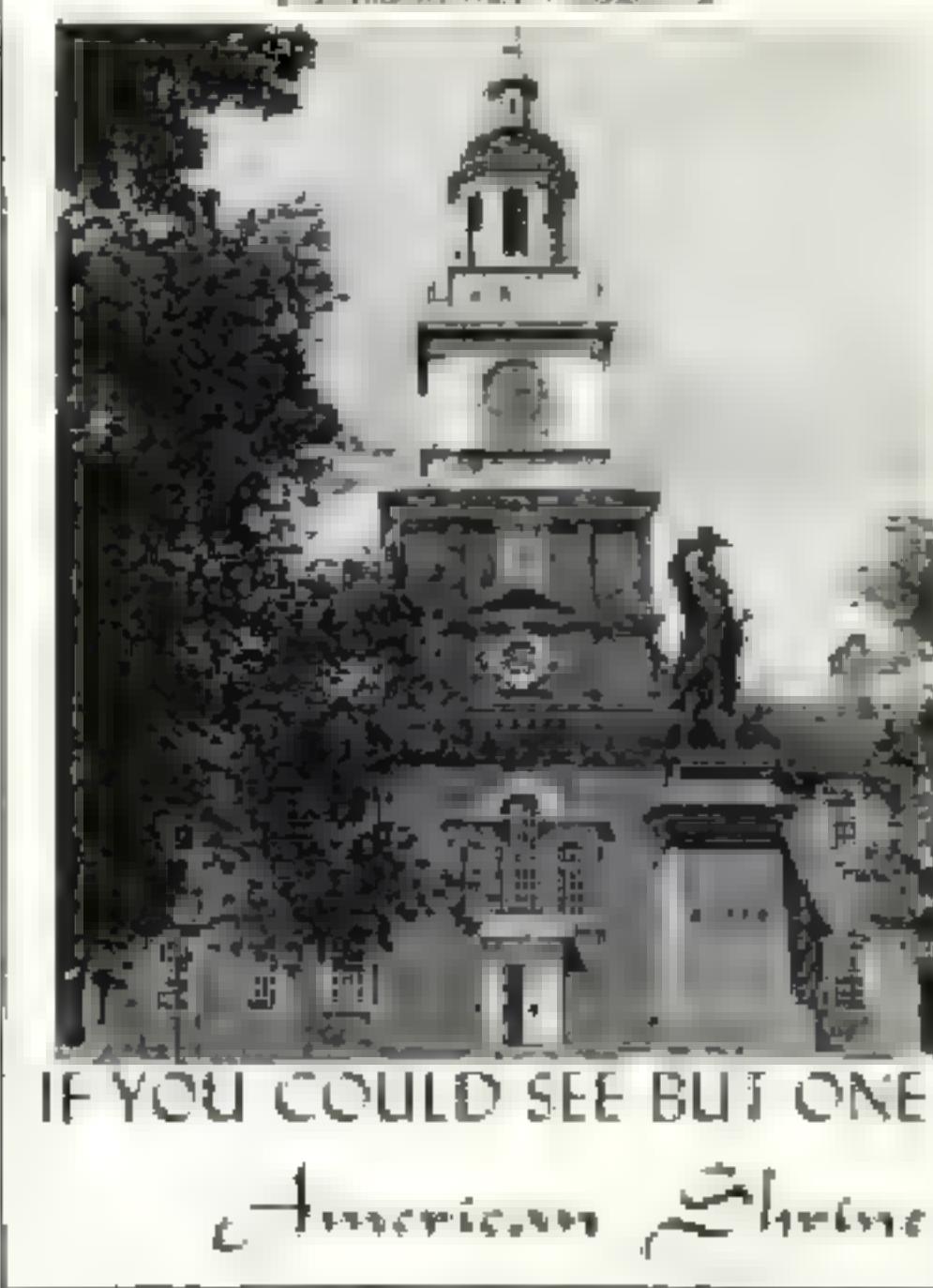
FRESH-FOOD STORAGE: You get a completely refrigerated and separately insulated Super-Master Refrigerator with an extra-wide base. You've got 7 cubic feet of storage space for fresh food. A continuous cooling keeps your refrigerator and freezer a full 12° F. cold for fresh foods. No need to defrost.



Refrigerators

More than 1,700,000 refrigerators in service 10 years or longer

GENERAL ELECTRIC



IF YOU COULD SEE BUT ONE American Attraction

...then, experience the elation of seeing the Liberty Bell—led by American heartbeats to 171 years of freedom. Read where Washington and Jefferson, Franklin and Adams . . . started America's growth and promise.

Here, also for your vacation pleasure, are more improved roads . . . more pastoral scenes . . . small towns . . . quaint folkways and traditional homes to delight you. Here are State Parks and forest areas . . . natural wonders . . . famous resorts . . . fine fishing and hunting . . . great living. You will enjoy Pennsylvania—the easiest State . . . to see in the nation—the easiest place to live in which "to see it is to do."

Let's go IF YOU DRIVE—DRIVE SAFELY

PENNSYLVANIA FOR A "NATIONAL" VACATION

Pennsylvania Department of Commerce

James H. Buff, Governor

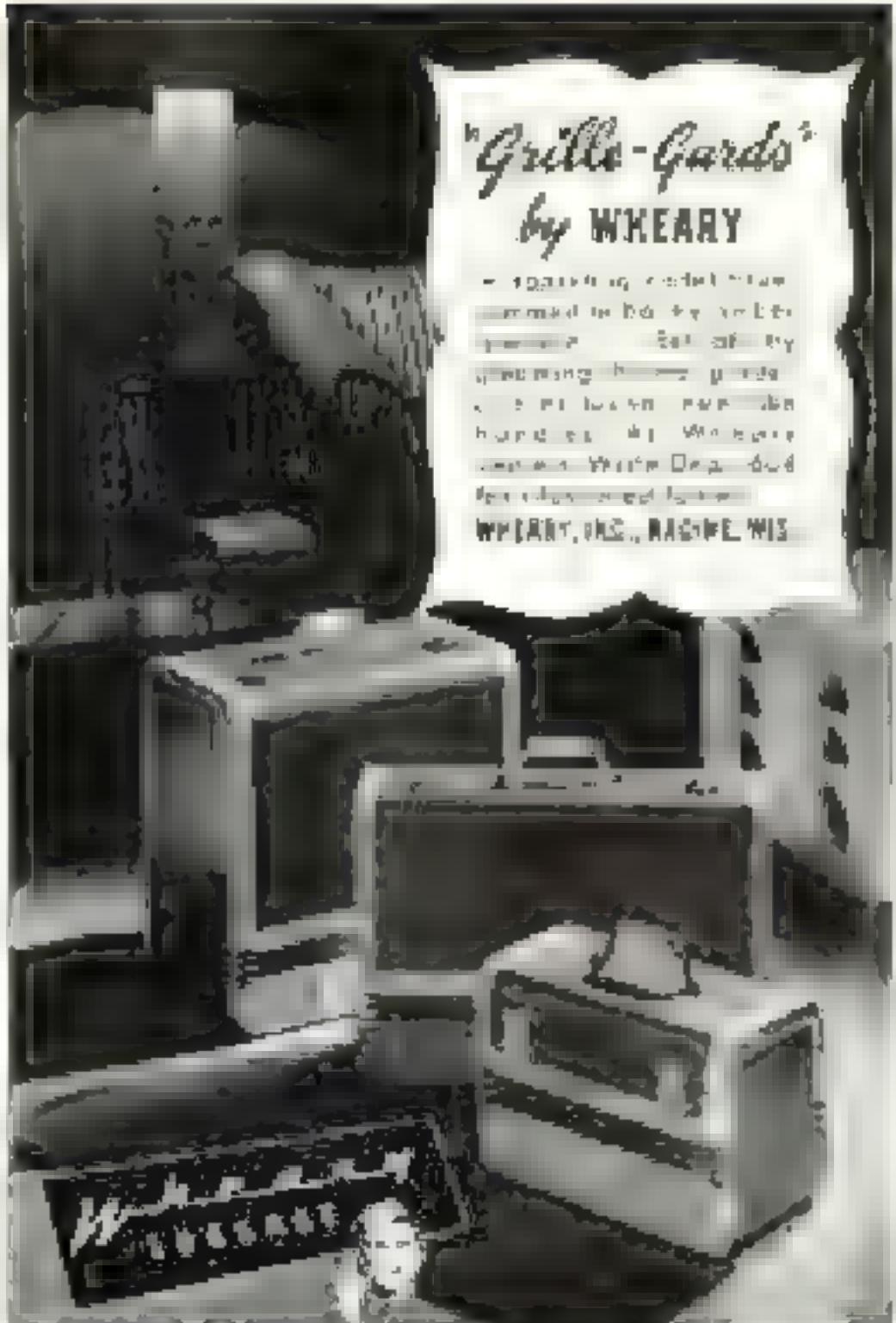
Oscar J. Matthews, Secretary of Commerce

Penns. Dept. of Commerce, Harrisburg, Pa.
Please send me information regarding Pennsylvania and the Highways Dept., N.Y. 4-2424

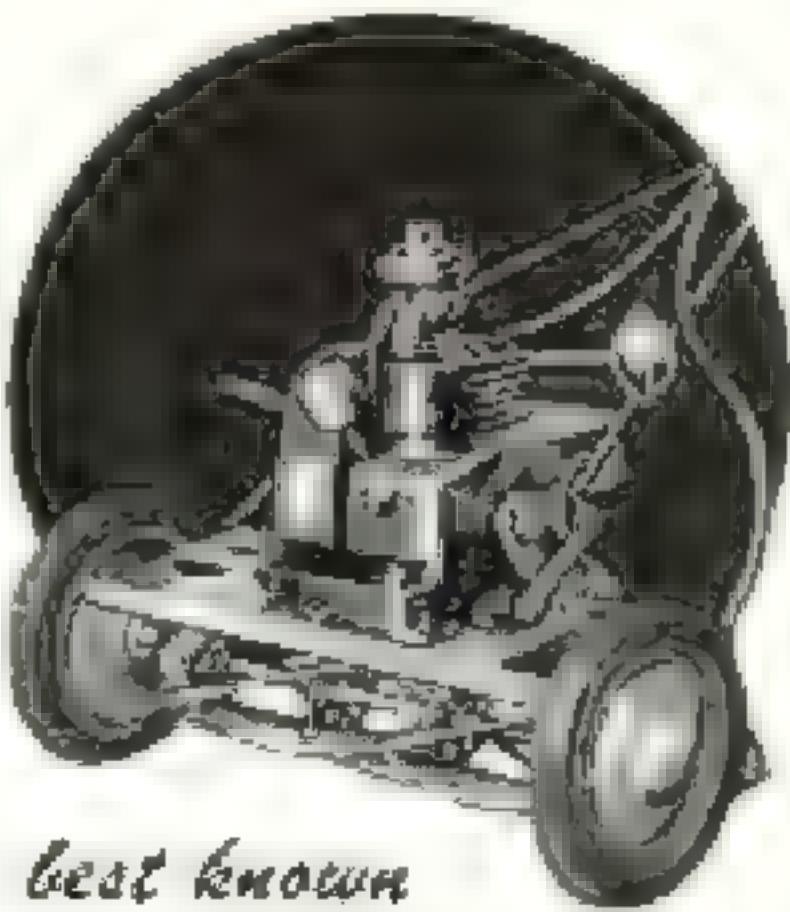
Name _____

Address _____

2020



Vehicle — THE NAME TO REMEMBER IN TRAVEL



best known

name in power-lawn-mowers

"MOTO-MOWER"

Why push a hand mower when you can drive a Moto-Mower . . . because of quality power mowers for twenty-nine years . . . write for literature and the name of the nearest dealer . . . a MOTO-MOWER is worth looking upon . . .

The . . . since 1911 to 1937.
MOTO-MOWER
4808 Woodward, Detroit 1
Phone 1919 **Company**

What Canadian Pacific Says...

GOES WITH THE WHOLE FAMILY!

AND CANADIAN PACIFIC SAYS Eastern Canada has everything! Gulf for Dad...good food and new faces for Mom...swimming for you...fishing for brother...tennis for sister but...and a "geo-conditioned" car motor to loaf and relax in! And Canadian Pacific gets you there...rested and ready for fun, in comfortable, well-appointed trains!



EVEN MR. LONGFELLOW couldn't do justice to the murmuring pines and hemlocks in the Longsleeve country. And, of course, he missed the wonderful Canadian Pacific hotel, Dingle Inn! It's in Nova Scotia, right in the heart of a playground patrolled by the sea.



LAKESIDE INN is another Canadian Pacific resort in Nova Scotia. And over in New Brunswick at St. Andrews-by-the-Sea is The Algonquin! That means, besides the sports and good food...you can expect warm hospitality and special service.

IF YOU LIKE COMFORT and courtesy...go Canadian Pacific! All over Canada, Canadian Pacific has hotels to take care of you! It's the most complete travel system in the world!

Canadian Pacific



SPANS THE WORLD

Ask Canadian Pacific or your travel agent about hotel, steamship or rail transportation.

I WEAR FALSE TEETH

yet my mouth feels fresh, clean
and cool—thanks to Polident!



Keep your dental plates
odor-free by daily
soaking in Polident

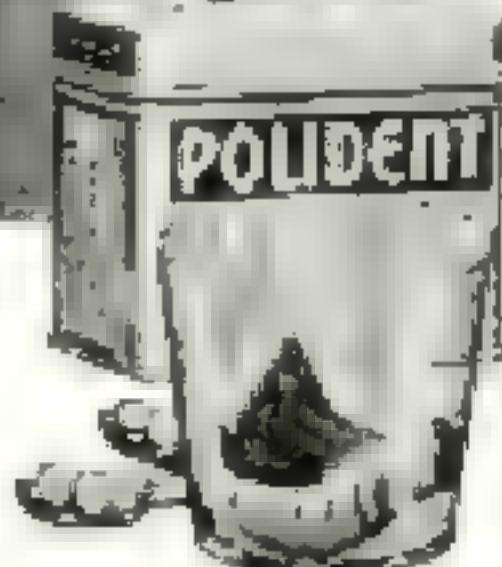
When plates taste bad—feel hot
and heavy in your mouth, wash
out for "Denture Breath", the real
disturber that comes from im-
proper cleaning. False teeth need
the care of a special denture
cleaner—POLIDENT. Safe,
easy, quick, Polident leaves your
plates soft, cool and fresh. No fear
of offensive "Denture Breath".

Remember, Polident keeps
your false teeth more natural
and odor-free from denture breath,
too. For a smile that sparkles, for
a mouth that feels cool, clean and
fresh—soak your plates in Polident
every day.

Polident comes in two sizes—
regular and large economy size.
Available at all drug-stores. It
costs only about a cent a day to
use, so get a can of Polident to-
day now—sure.

"I know I'm free from Denture Breath these
days, thanks to Polident. And my mouth
feels so much better now that my plate is
really clean!"

Mrs. G. C. Bedon, Mass.



Soak plate or bridge
daily—fifteen minutes
or more—in a fresh,
cleaning solution of
Polident and water.

No Brushing

Use **POLIDENT** Daily

RECOMMENDED BY MORE DENTISTS THAN ANY OTHER DENTURE CLEANSER



What can you do till the DOCTOR comes?

Q. Do you know what to do if there's an accident?

A. If you're not trained as a medical technician, you have several other ways to help with first aid. You can review First Aid for Home and Family which is available where you can buy it or rent it. You can also check with your local Red Cross chapter to learn how to become a Red Cross volunteer. You can also contact your local chapter of the American Red Cross.



Q. Do you know what not to do?



A. Don't try to be the doctor. Do whatever you can safely to care for the victim. The most important thing is to keep the person warm and quiet. Call for help. Call the general emergency number if you are unsure. Don't give the person anything to eat or drink. Remember, don't do the wrong things. It's better than doing nothing, and you should follow the "If in doubt—DON'T" rule.

Q. Have you a First Aid Book in your home?

A. About one-half of all veterans carry an American Red Cross book of first aid. These books are excellent. If you don't have one, you can buy them at stores such as "K mart" or "Wal-Mart." Proper treatment for heating stroke and everything from sunburns to sprains and fractures is easy to get when you know quickly what to do and read the proper books.



Metropolitan Life Insurance Company
1 Madison Avenue, New York 10016, N.Y.

Please send me information about:
1. Life Insurance
2. Health Insurance
Name _____
State _____
City _____ State _____

**Metropolitan Life
Insurance Company**

Metropolitan Life Insurance Company
1 Madison Avenue, New York 10016, N.Y.
Phone: 212-697-1000
Fax: 212-697-1000
E-mail: metlife@metlife.com

Peace of mind is priceless

Wet pavements never threaten your peace of mind...with General Squeegees to give you the quick-stopping safety of "action-traction". Rain or shine, every mile traveled is safer, more care-free because General's Top Quality assures blowout protection and extra mileage...quieter, easier riding. The complete confidence you feel riding on Generals is worth many times the little extra it costs.



—goes a long way to make friends



Stretch and Refresh...Have a Coca-Cola

Baseball is a fast game, yet it's chock-full of pauses.

There's the pause before the pitch, the pause between innnings...and the pause that refreshes with ice cold Coca-Cola all through the stands and bleachers. With so much excitement going on, the little minute for a big rest with a frosty bottle of Coke is so welcome to so many.

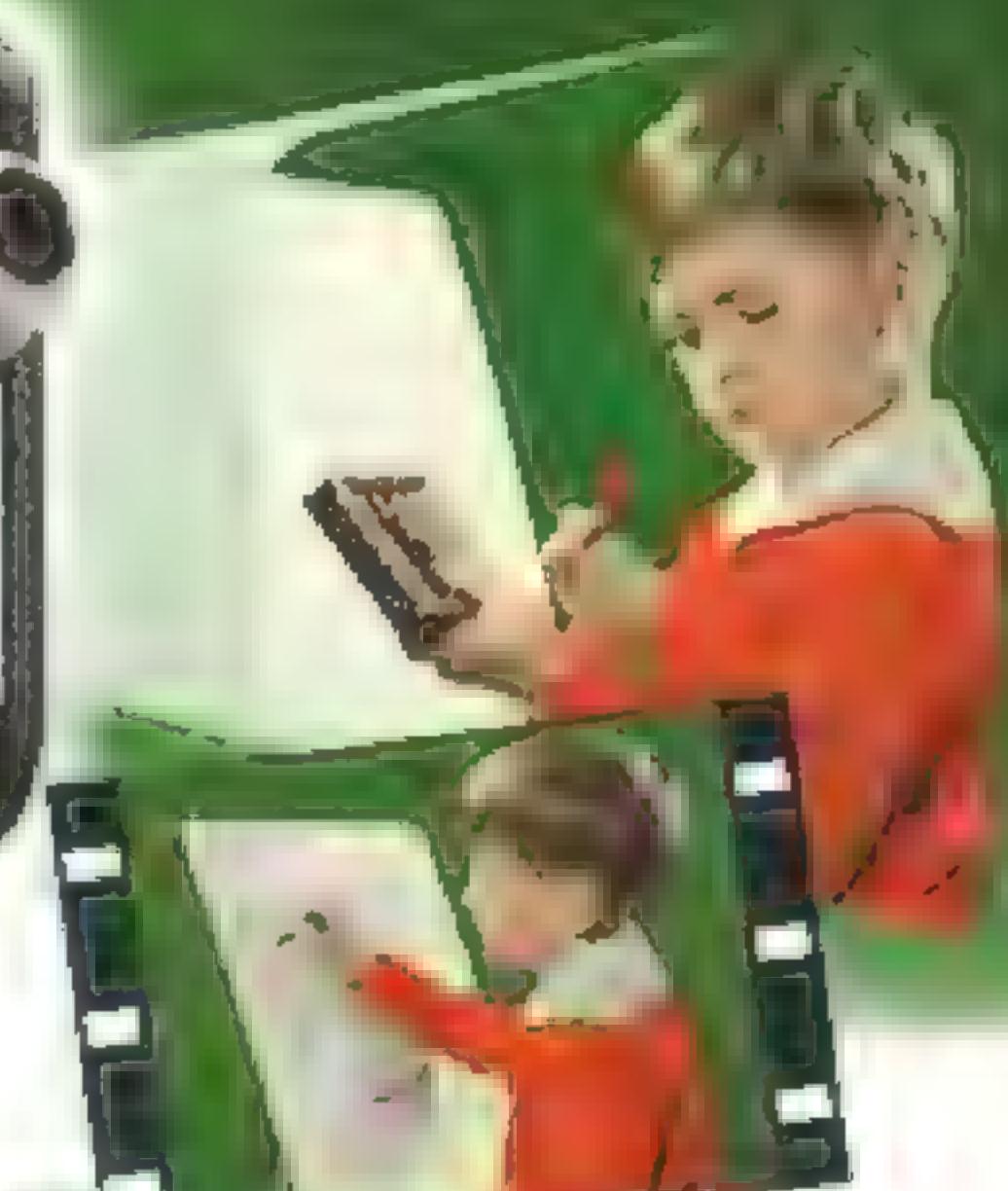


Home movies cost less than most folks think



...with a Cine-Kodak Camera

The students will use the following steps to solve the problem:
1. Read the problem carefully.
2. Decide what information is given.
3. Decide what needs to be found.
4. Plan how to solve the problem.
5. Solve the problem.
6. Check the answer.



La 1 - 3, 6
L 2 - L 1 + 1
+ 1 + 1 + 1

Saint Paul's Hospital



The Supply Situation

1
2
3
4

EASTMAN KODAK COMPANY
ROCHESTER 4- N.Y.



Ein Kodak Film



Kodansha Eight-33



Kodak eZap light-90A
Projektor

Kodak

*"It means all those things
we never could say"*

A beautiful family monument, standing serene in its setting, has an eloquence, a depth of meaning that expresses many of those things we feel but can never say.

In Rock of Ages you have a choice of design and beauty that helps you choose the one Family Monument that exactly expresses your own and your family's devotion. And when you choose Rock of Ages you know how your loved ones will create through generations to



come. For every Rock of Ages Family Monument is built by a skilled craftsman dedicated to your family's descendants.

ROCK of AGES

HARRE GRANITE FAMILY MONUMENTS

ALL STONE IS CUT AND FINISHED IN THE UNITED STATES
LOOK FOR THE ROCK of AGES SEAL, IT IDENTIFIES ALL ROCK OF AGES MONUMENTS



come. For every Rock of Ages Family Monument is built by a skilled craftsman dedicated to your family's descendants. Most families choose their family cemetery plot before the need arises. In this way they gain the great satisfaction of knowing that all the members of the family are in harmonious approval regarding this important choice — the family resting place.



RECOMMENDATION FOR MEMBERSHIP

IN THE

NATIONAL GEOGRAPHIC SOCIETY

* The Membership Dues, Which Are for the Calendar Year, Include
Subscription to the National Geographic Magazine

MEMPHIS NATIONAL BANK - TRUST COMPANY - MEMBER FEDERAL RESERVE

1948

To the Secretary, National Geographic Society
Sixteenth and M Streets Northwest, Washington 6, D. C.,

I nominate

Occupation

Information so important for the record

Address

for membership in The Society

More radio pleasure for less money-

• Happy holiday—with your Motorola Portable to stay you a love song or bring you laughter and thrills—a better you go!—its voice will be rich and full where others often fail. In no other portable can you match the outstanding value of the Motorola Model 48L11 (above.) Big volume and glorious tone in a compact two-tone plastic cabinet. Button antenna. Four tubes plus receive Superheterodyne. Tuned RF section. Battery operation. . . . \$1995

Model 48L11—AS ABOVE, BUT AC-DC OR BATTERY OPERATION \$2995



AMERICA'S FAVORITE PERSONAL PORTABLES

The Motorola PLAYMATE 20—the glamour-baby of personal portables. Tiny, but with the tone and power of ten many times its size. All metal cabinet. Antenna built in the front. A 110 oz. battery operation. \$3995

The Motorola Model 48L11—new all through and breathtakingly beautiful! All controls in thumb's reach with a unique Exclusive Dial-in Handle. Outperforms them all! AC-DC or battery operation. \$4995

**Motorola
PORTABLES**

For a free catalog write
or wire to:
Motorola, Inc., Chicago, Ill.

Mail order outlet on all portables

MOTOROLA TELEVISION

Clearer, brighter pictures and wonderful sound. Your best buy at only \$179.95 (local and initial shipping included.)

Look in your Classified Telephone Book for the name of your nearest Motorola Dealer.

MOTOROLA INC., CHICAGO 51, ILL.

NATIONAL GEOGRAPHIC

OF ENDLESS FASCINATION—PERMANENT REFERENCE VALUE

BOOKS

NATIONAL GEOGRAPHIC MAGAZINE Cumulative Index, 1899-1947

The treasure house of authoritative information in your NATIONAL GEOGRAPHIC MAGAZINES from 1899 through 1947 is opened for you by the new NATIONAL GEOGRAPHIC MAGAZINE Cumulative Index, 1899-1946, with its accompanying supplement for 1947. It contains 2,000 references to 10,000 subjects, places, nature subjects, authors, tables, maps, and pictures. Also included is a reprint of the National Geographic Society's Manual of the Gilbert Islands, with 51 illustrations.

Whether you have only a few back numbers of the NATIONAL GEOGRAPHIC or all 889 of them from 1899 through 1947, this Index will enable you instantly to select and locate all published material on the subjects in which you are interested. The Magazine and Index together are the equivalent of a pictorial atlas, gazetteer, and comprehensive encyclopedia of world geography.

Indispensable in homes, schools, and libraries, the NATIONAL GEOGRAPHIC MAGAZINE Cumulative Index is made available at less than cost at one of The Society's educational services. Blue cloth cover; 614 pages; 7 x 10 inches. \$3.00 in United States and elsewhere. Postage extra.

NAME OF BOOK	NAME OF AUTHOR	PAGE	EDITION	PRICE	POSTAGE
National Geographic Index, 1899-1946	John Marshall	62	1946	\$3.00	10c
Board Earth on Flat Paper					10c
The Great Blue Book House					10c
Copper Lemur and the Dragon					10c
Saboteur Mosquitoes					10c
Insignia and Decorations					10c
I enclose sum of \$ _____ Books to be sent postpaid					
Name _____ Address _____					

The Round Earth on Flat Paper: A fascinating non-technical study of cartography, tracing the evolution of map making from ancient times. Written and illustrated by Society cartographers William Chamberlin and Charles E. K. Howard. An easily understood text and 107 photographs and drawings graphically demonstrate the properties of different map projections. An illustrated Foreword by Gilbert Grosvenor describes The Society's map services and unique contributions to modern cartography. 120 pages, 7 x 10 inches. \$6.00 in United States and elsewhere.

The Grandeur That Was Rome: Ancient Rome at the height of its glory is portrayed in this 90-page booklet reprinted from the November, 1946, issue of the NATIONAL GEOGRAPHIC. It features illustrations in FULL COLOR, by H. M. Herget, depicting Roman life and customs. A page of descriptive text accompanies each printing. Two articles, "Roman Festivals" and a two-page map, are also included. This edition booklet to CLASSIC GREECE AND THE AEGEAN, 7 x 10 inches, \$6.00 in United States and elsewhere. \$6.00

Classic Greece & the Aegean: A 25-page reprint from the March and May, 1944, issues of the NATIONAL GEOGRAPHIC. Features 32 color photographs with descriptive text reconstructing life in Ancient Greece. There are 16 photographs in NATIONAL COLOR, 41 in monochrome; three articles; two maps. Indispensable to students and teachers. Measuring 7 x 10 inches, the book is bound in heavy paper cover. \$5.00 in United States and \$6.00 elsewhere. \$5.00

Saboteur Mosquitoes: For Nature students—a reprint of "Saboteur Mosquitoes" and "Life Story of the Mosquito" from the February, 1944 NATIONAL GEOGRAPHIC. Contains 10 color photographs from life, 18 monochrome illustrations, engaging narrative. 31 pages, 7 x 10 inches. \$5.00 in United States and \$6.00 elsewhere. \$5.00

Insignia & Decorations of U. S. Armed Forces: 247 FULL COLOR reproductions and 139 monochrome photographs illustrate this compact handbook. In addition to insignia, decorations include awards of valor and courage, the men who won them, and their stories and legends. A valuable identification guide for the over 100,000 World War II insignia and decorations. Heavy-weight paper covers; 208 pages, 7 x 10 inches. \$1 in U. S. & Poss. Abroad, \$1.25

The vacation you promised yourself

... the luxury of a superb
cruise liner
... the glamour of

South America

Once again the 33,000-ton liners of Moore-McCormack's Good Neighbor Fleet, completely rebuilt and restyled, sail southward ... the harbinger to the wonderlands of Brazil, Uruguay and Argentina. Every comfort awaits the traveler ... you cruise in style ... outdoor tiled swimming pools surrounded by broad sports decks ... distinguished American cuisine ... air-conditioned dining salons ... spacious public rooms ... all staterooms outside, many with private bath or shower. Here are splendid ships — operating in ports exquisitely beautiful.

S.S. BRAZIL • S.S. URUGUAY • S.S. ARGENTINA
Sailing fortnightly from New York

38-DAY CRUISES

to RIO • SANTOS • SAO PAULO
MONTEVIDEO • BUENOS AIRES • TRINIDAD
For information, consult
our Authorized Travel Agents

MOORE-McGORMACK
Lines
5 Broadway New York 4

ATLANTA • BIRMINGHAM • BOSTON • CHICAGO • DALLAS
DETROIT • LOS ANGELES • PHILADELPHIA • PITTSBURGH • SEATTLE
PORTLAND • PORTLAND, ORE. • SAN FRANCISCO • WASHINGTON, D.C.



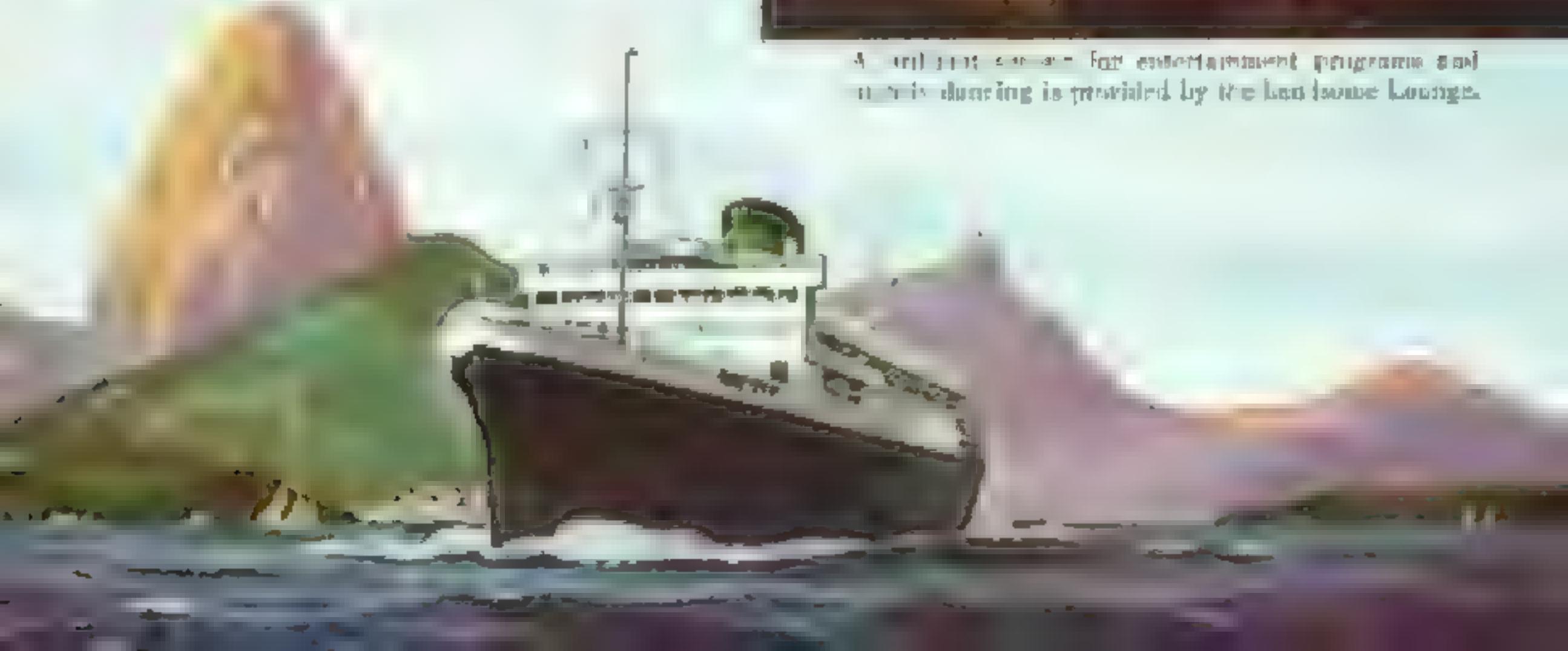
The Palacio de la Exposición, residence of Argentina's president, in the Plaza de Mayo in Buenos Aires.



On the sun deck of the S.S. BRAZIL, the sun lounger is a favorite spot for relaxation after a day at sea.



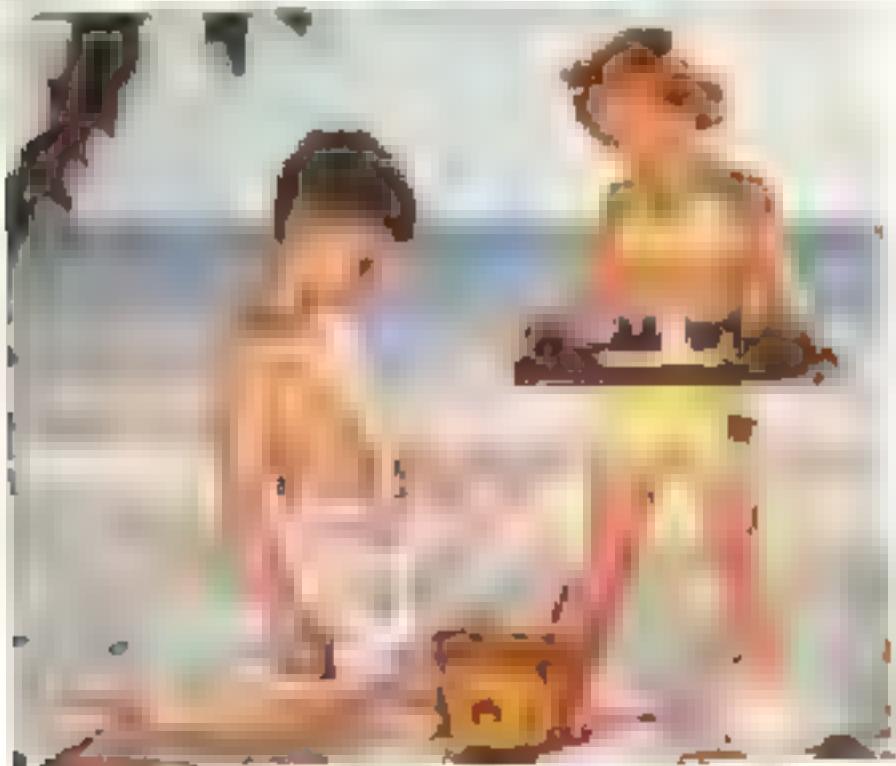
A brilliant scene — for entertainment programs and night dancing is provided by the Casino Lounge.



Summer Vacation Dollars go further in **FLORIDA!**

It's true! This summer, you'll get more fun
for your money in Florida - in many ways.

Accommodations! With special rates in effect in most of
Florida's resort areas, you can gain extra vacation days and still keep within your
budget. And there's plenty of room!



Florida's open beaches provide great
opportunities for dining.



Florida's warm weather makes it easy to keep active
and healthy.



Florida offers one of many sports enjoyed in
the sun.



Florida's warm weather makes it easy to keep active
and healthy.

Weather! Constant trade winds and Gulf breezes air-cool 11 miles from coast to coast. Florida's clear, warm-time skies ensure more days for healthful, outdoor play - salt-water bathing, swimming, fishing, golf, sunbathing and Florida's wide variety of other holiday pleasures.

Family fun! Florida offers more in the way of family fun - more things to do, more

places to see - that both youngsters and grownups will enjoy.

Every year, more families are discovering these multiple advantages of a summer vacation to Florida. Join them this summer, see ALL of Florida...And with a thought to the future take time to investigate the opportunities Florida has for business, industry, agriculture - and for happier living.

COME TO

Florida
THE SUNSHINE STATE

MAIL THIS CARD TODAY!

Name _____
Address _____
City _____ State _____ Zip _____

Please send me your free, 16-page, full-color booklet
"Florida - The Sunshine State."

Name _____
Street and No. _____

City _____ State _____ Zip _____

CALVERT "SCHOOL-AT-HOME"

Kindergarten through 9th grade. Bound scheduling for your child wherever you live. No teaching experience required. Tuition to other schools, rates with advanced standing. Daily lessons, books supplied free, fees. Valuable advice every step along the way. Send for Catalog.

CALVERT SCHOOL

38 E TUSCANY ROAD, ALEXANDRIA 30, VA.

Colleges for Women

CHRISTIAN COLLEGE

1000 N. University Street, Seattle 10, Wash.

President: Dr. W. C. Miller. Faculty: 100. Students: 1000.

For catalog, address: Christian College, Box 200, Columbia, Mo.

LINDENWOOD COLLEGE

1000 N. University Street, Seattle 10, Wash. Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

MARYWOOD COLLEGE

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

Colleges for Men

INDIANA TECHNICAL COLLEGE

1000 N. University Street, Seattle 10, Wash. Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

300 S. Washington Blvd., Ft. Wayne, Ind.

EXECUTIVE TRAINING

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

OXFORD SCHOOL OF BUSINESS ADMINISTRATION

1000 N. University Street, Seattle 10, Wash.

Vocational

BALLARD SCHOOL

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

BOSTON UNIVERSITY

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

George R. Mahanay, Dean, 31

Evans St., Cambridge 38, Massachusetts.

Bryant COLLEGE

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

KANSAS CITY ART INSTITUTE

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

GENERAL VOCATIONAL TRAINING

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

MILWAUKEE SCHOOL OF ENGINEERING

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

WALNUT HILL

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

WARRENTON COUNTRY SCHOOL

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

WYOMING VALLEY SCHOOL

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

YALE UNIVERSITY

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

ZEPHYRUS

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

KATHARINE GIBBS

1000 N. University Street, Seattle 10, Wash. Accredited by the Northwest Association of Schools and Colleges. Tuition \$100-\$125 per quarter. Financial aid available. President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

National College of Education

Our First Year

Through Preparation for Teaching Nurses, School & Early Childhood, Elementary, Secondary, and Higher Education.

Professional and Technical courses.

Mid-year and summer sessions.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

WHY DON'T YOU WRITE?

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

CHAPEL HILL SCHOOL

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and Colleges.

President: Dr. W. C. Miller. Box 240, St. Charles, Missouri.

1000 N. University Street, Seattle 10, Wash.

Accredited by the Northwest Association of Schools and

Camps

CAMP ARROWHEAD

1000 acres of virgin forest, 1000 acres of water, 1000 miles of streams, 1000 miles of trails, 1000 miles of fun.

BROWN LEDGE STATE PARK

Mr. and Mrs. W. E. Brown
Administrator, Box 6, Lanesville, N.C.

CULVER SUMMER SCHOOLS

on Lake Maxinkuckee.

40 Lake Shore Ave., Culver, Ind.

OGONTZ

South Bend, Mich., Box 800, Ogontz School, P. O. Box 800.

ST. JOHN'S

Sports and recreational camp.

St. John's Military Academy

Box 456, New Milford, Conn.

W. 136 DeKeen Hall, Delafield, Wis. *

SUSQUEHANNA

New Milford, Pa., 400 East Main Street.

Robert T. Smith, New Milford, Pennsylvania.

Boys' Schools

ADIRONDACK-FLORIDA

Box 100, Saranac Lake, N.Y.

D. Pierre G. Carpenter, Headmaster, N.Y.

ADMIRAL BILLARD ACADEMY

Box 100, Saranac Lake, N.Y.

W. H. Billard, Headmaster, N.Y.

* MANLIUS *



ACCREDITED college preparatory and 9th grade, tutorial assistance included. Small classes. Military training develops initiative, character, fitness. ROTC. Prepares for Government Academies. Diving. All sports. Seven athletic fields. Golf. Summer campers. Victory veterans. Counselor. Director of Administration, Mrs. G. R. Menton, N.Y.

MASSANUTTEN MILITARY ACADEMY

300 ft. above sea level. All-around leadership and leadership. Outstanding records by graduates. Operates Camp Laponia for boys 8 to 14, July-August. For catalog and "Sailor," address Box 428, Woodstock, Virginia.

MERCERSBURG ACADEMY

Excellence preparation for leading colleges. Girls 9-12. Separate houses. Beautiful objects unique. 24 mi. Washington. Swimming pools, gym, pool, tennis courts. Little over. Catalog. Charles S. Tippins, Ph.D., Box N, Mercersburg, Pa.

MILFORD Famous for its teaching for over thirty years. Individual attention to every small class. Prepares thoroughly for leading colleges. Optional accelerated program for mature students. Separate lower school. Summer school and camp open July 3. **William C. Pearson, Headmaster, Milford, Colmar, Pa.**

MISSOURI MILITARY ACADEMY AND JUNIOR SCHOOL

300 ft. Fully accredited. ROTC. Individualized instruction. How to Study. Complete publication program prepares for future. All sports. Activities. 100% success. Head, Col. G. R. Stridling, 968 Main St., Mexico, Mo.

MORGAN PARK MILITARY

Character development of everyone. Fully accredited. College prep. High academic standards. ROTC. Sports. Summer Camp. University of Illinois. Lower School. 100% pass. Catalog. Col. Sandford Setters, Jr., Box 788, Morgan Park, Chicago 43, Ill.

"PREP" FOR LEADERSHIP IN COLLEGE AND CAREER

Our graduates achieve leadership in all walks of life—thanks to unique combination of modern educational methods with real military training.

Individual attention builds character, physical health and high scholarship. Certificates accepted at any American college. Junior school for 3rd to 7th grades. Write for catalog. 22 Academy Ave., Centralia - 68 - Hudson, N.Y.

NEW YORK MILITARY ACADEMY

Highest War Dept. Inspection Rating
The School of Distinction

NORTHWESTERN MILITARY

AND NAVAL ACADEMY. Thorough college preparation. ROTC. Highest pass rating. All sports. Sailboats, motor boats. On Lake Geneva. 1½ miles from Chicago. Summer camp. 100% pass. Catalog. 36 Lake Shore Road, Lake Geneva, Wis.

OHIO MILITARY INSTITUTE

Unique and the best in every way. Large faculty, small classes. Lower School for younger boys. 100% pass. Certified to Colleges. High, vocational, technical, Music, sports, new armory. Head, Col. A. M. Henshaw, Box 428, College Hill, Cincinnati 24, Ohio.

ONARGA MILITARY SCHOOL

Superior College Preparation. Accredited with three years. Teachers How to Study. Business Courses. Continuous Guidance. Charterer first. 10th grad. up. New dorm and pool. 50 miles S. of Chicago. Residential campus. Col. L. W. Bunting, Box W, Georgia, Ill.

EDUCATIONAL TROUBLE SHOOTERS

Each Student a Queen. College prep. 9th-12th, general education. The best: (1) disrupts causes of delinquency; (2) creates individualized programs for overcome difficulties; (3) looks up lost time. **Not everyone wants Oxford, but he who needs us, needs us badly.** L. H. Belmont, Head. Faculty 100%. Enrollment 50-75 persons. Box G-25, Pleasantville, N.J.



OXFORD ACADEMY

PEACOCK MILITARY ACADEMY

A University School since 1916. All-around development. Fully accredited. Ages 12 to 18. Limited enrollment. Ceremonies and Parades. Address the Superintendent, 204 Peacock Ave., Woodburn Lake, San Antonio 2, Texas.

PEDDIE Boys thoroughly prepared for college and for life. Fully accredited. Jr. School. Small classes, individual guidance. Public speaking course required. Sports. Gym, playing fields, golf, and 100 acres. Summer school. Grades 9-12. 100% pass. Teacher, **Walter E. Saunders, Headmaster, Box 5-N, Nighttown, N.J.**

PEEKSKILL MILITARY ACADEMY

ACCREDITED preparation for all colleges. Small classes. High year. Physical training for all. Swimming pool, Jr. & Jr. Schools beginning 9th grade. 8 miles from N.Y. City. Catalog. Headmaster, Box 306, Peekskill, N.Y.

THE PENNINGTON SCHOOL

From boys—Accredited College Preparation. Girls, 9-12. Grade 9-12. Small classes with daily boys' drill. Modern. Music, crafts. All sports. Gym, pool. Near Princeton. 100% pass. Enrolled. Illustrated catalog. E. B. Crampton, P.O. Box N, Pennington, N.J.

PENNSYLVANIA MILITARY

FULLY ACCREDITED military preparation. Also 9th grade. Small classes. Guidance program. ROTC. Highest War Department rating. All-around sports—athletism and riding. 100% pass. Catalog. Write **C. R. Mall, Dept. 3, Chester, Penna.**

PERKIOMEN SCHOOL

20th Year. Boys taught how to study. Thorough, individualized instruction in small classes. Grades 9-12, and post grad. Accredited. Home campus. Summer session. Catalogue. **Albert E. Rogers, Box 528, Pennsauken, N.J. (near Allentown).**

THE PHELPS SCHOOL

State, grades 9-12. College prep. on 12-acre farm near Philadelphia. Small classes. Limited equipment. Shops, labs. Dairy herd. Swimming pool, Sports. Residential work. Summer school camp. Catalog. **Norman T. Phelps, Box 9, Malvern, Pa.**

RANDOLPH-MACON MILITARY ACADEMY

Accredited. 20th Year. At northern entrance to Blue Ridge. Prepare for college through intensive study program. Hospital buildings. Limited capacity. Write for catalog. **Col. John C. Doggett, Prin., Box E, Front Royal, Va.**

RIVERSIDE MILITARY ACADEMY

FULLY ACCREDITED preparation for all colleges. Also Post Graduate and Junior College. Separate school for younger boys. Economic, all-inclusive rate.

HIGHEST official Army rating. Contract association with selected families, all time in camp building and caring at same tables with parents. Weekly reports. Program GUARANTEED.

IMPROVED health and interest through two complete school planter. Fall and spring in Georgia mountains; winter at Hollywood (near Miami), Florida.

For illustrated catalog, address:

GENERAL SANDY BEAKER, President

WINTER NEAR MIAMI Box 306-L, Quincy, Ill., or
FALL & SPRING IN BLUE RIDGE MOUNTAINS

ST. JOHN'S MILITARY ACADEMY

ACCREDITED college prep. in Wisconsin's land of lakes. Grades 9-12. Balanced program. Excellent faculty. Riding, golf, rifle, marksmanship, sailing. Winter sports. Flying. Summer camp. Catalog. **3338 DeKoven Hall, Beloit, Wis.**

SAINT LEO COLLEGE PREP

Accredited. Superior college preparation. Boys 9-12. Small classes. Supervised study. Ideal climate. 100-acre campus. Private lake. Sports. Modern equipment. Gym, Nat. 100% New Tampa. Catalog. **Rev. Father Raphael, Box 4, Saint Leo, Fla.**

SAINT THOMAS MILITARY ACADEMY

Military training combined with superior college preparation. Institutional education. Gym, gym, sports. Swimming, etc. Catalog. **Mary Rev. V. J. Flynn, Box 2, St. Paul 3, Minn.**

SEVERN SCHOOL

OFFICIAL prep. for college, technical schools, and Service Academies. Grades 9-12. Small classes insure individual attention. Accredited. Athletics. Near Annapolis on Severn River. Limited enrollment. 100% pass. Catalog. **Headmistress M. Test, Ph.D., Box 100, Severn Park, Md.**

SEWANEE MILITARY ACADEMY

Traditional prep. for college. Small classes—boys taught how to study. Summer session. Private mountain campus in scenic resort area. Sports. Gym, pool. Moderate rate. Hat, Jr. Catalog. **Box 9, P. O. Box 24, Sewanee, Tenn.**

SHATTUCK SCHOOL

Established 1844. National. Best military prep. Standard 9-12. Master students from 1-12. ROTC. Sports. Golf course, trap-shoot, trapshooting club, archery, pool, 100% pass. Summer school camp. Catalog. **Donald Harting, P.O. Box 485, Sherman Hill.**

STAUNTON MILITARY ACADEMY

Distinguished academic record. Successfully prepares for college. Fully accredited. Business courses available. Thorough military training develops good, self-reliant men. ROTC unit. Army's highest rating. Complete athletic program. Superior health record. Separate Jr. School. Visitors welcome. **Col. G. R. Smith, Box D, Staunton, Va.**



STONY BROOK

Accredited program including thorough training in mathematics, science, English, other fundamentals; physical fitness—Christian teaching. Grades seven to college. 100% success, an average by state. Address: **Frank E. Gaeblein, Littleton, Box N, Stony Brook, Long Island, N.Y.**

TENNESSEE MILITARY INSTITUTE

For large planning for college, over 90% of graduates enter college. Also business courses. Superior members (members' maximum interest). Over 1000 boys. Enrollment about 2000. Small classes, personal attention, high academic standards. Grades 9-12. Beautiful 144-acre campus. All sports, interscholastic games at three age-levels. Gym, pool. ROTC. Catalog.

Col. C. R. Endley, Sept. Box 147, Sweetwater, Tenn.

THOMAS JEFFERSON SCHOOL

Distinctive college preparatory; all faculty Harvard, Yale, Princeton graduates. 1 year high school, 12 miles from St. Louis. Excellent sports, athletic and recreational facilities. **Robin W. McCay, Route 8, St. Louis 23, Missouri.**

TODD SCHOOL AND CAMP

Boys 6 to 20. 100% pass. Accredited individual College Preparation. Study helps. Creative activities from Aviation to Journalism. Friendly environment. Riding. Boys from College. Catalog. Roger Hill, Pres., Box 9, Woodstock, Illinois.

VALLEY FORGE MILITARY ACADEMY

AT THE WARRIOR'S SWANSON

VALLEY FORGE established 1863. Soldiers are leaders in peace as they were in war. Col. Pres., and Jr. Col. Ages 12-20. Small personal staff. Classroom guidance and testing. Unique training camp. Distinguished faculty. All-weather sports. Intramural activities for all. 100% increased training. Major League Football, Academy, Cavalry, 75% pass, Infantry, Guard, Jr. R.C. Cadets. **Box M. Wayne, Pres.**

WENTWORTH MILITARY ACADEMY

Accredited 1910 College. Senior ROTC, CAA Flying. All accredited. Heart of America. Large gym. Indoor pool. All sports. Hiking. Measurements. Country Club. Summer school. Catalog. **Col. F. M. Sullers, Box 2 Wash. Place, Lexington, Mo.**

WESTERN MILITARY ACADEMY

Officially accredited training program for boy soldiers. Grades 9-12. Boys taught how to study. Personal attention. ROTC. Highest pass rating. Sports. Hiking. Pool, gym, 700 ft. from St. Louis. Catalog. **Col. W. L. Jackson, Pres., Box H-2, Alton, Ill.**

WILLISTON ACADEMY

Opportunities for boys of modest cost. Enrollment over half a million. Students regularly accepted by all eastern colleges. Modern dormitories, swimming pool. Separate Junior School. **A. V. Gossard, Headmaster, Box 23, Easthampton, Mass.**

WORCESTER ACADEMY

INTER-RELIGIOUSLY-known prep. school for boys. Est. 1824. Sound preparation for college and for life. Well-integrated religious education program. **LeRoy A. Campbell, Ph.D., Headmaster, 95 Providence Street, Worcester 4, Mass.**



"Kodak" is a
Trade mark.

The camera that won't let you miss . . . Big reflex finder shows you your picture before you take it. Shutter 1/200 with built-in flash. F/3.5 Lumenized twin lenses. Black-and-white pictures, $2\frac{1}{4} \times 2\frac{1}{4}$; color pictures, $2\frac{1}{8} \times 2\frac{1}{8}$. With field case, \$120 plus tax. Flash attachment, \$9.50 plus tax. Booklet at Kodak dealers'. . .
Eastman Kodak Co., Rochester 4, N. Y.

(Prices subject to change without notice)

Kodak Reflex Camera

Kodak

Free Booklet Helps
HARD of HEARING!



If you're interested in better hearing, you'll want this valuable free booklet, "Modern Science and Your Hearing." Prepared with the help of scientists at Bell Telephone Laboratories, it is published by Western Electric. Already, about 100,000 copies have been distributed. It's fully illustrated, informative, yet easy to read and understand. It tells you how hearing loss occurs, what science can do to correct this condition. Send today for your copy of this comforting and helpful booklet, before the present supply is exhausted.

FREE! USE THIS COUPON

Western Electric Dept. 360-N6

193 Broadway, New York 7, N. Y.

Send me "Modern Science and Your Hearing" plus free booklet about two new all-in-one Western Electric Hearing Aids.

Name _____

Address _____

City _____ State _____

Distributed in U. S. A. by Raytheon Electric Co.; in Canada by Raytheon Electric Co. Ltd.; in other countries by Western Corp.



Who Pays for Telephone Expansion?

INVESTORS DO

They invest in telephone bonds and stocks and we use the money to build new telephone facilities.

On the other hand, the money you pay us for telephone service is used for wages, taxes, depreciation and other operating costs.

So when you read about the millions of dollars we are putting into our expan-

sion program—or see a new building going up—it is good to be able to say: "Thanks, Mr. and Mrs. Investor. Thanks for putting up so much money so we can have so much more and better telephone service."

That's the way it happens.



BELL TELEPHONE SYSTEM



Matson proudly announces
the new *Lurline*...finest cruise ship afloat



You cruise in new comfort aboard the Lurline. Staterooms are spacious, beautifully decorated and air-conditioned. Wardrobe closets are large; mirrors, too. One bed folds into a wall, another becomes a sofa to give you a living room by day.

You live in new beauty aboard the Lurline. Public rooms are smartly modern in design... soft pastel colors accented by Polynesian motifs. Here you'll meet new friends, listen to concerts, enjoy the cocktail hour, dance. Here you'll dine superbly.

You can play or relax aboard the Lurline. It's well-equipped for deck games, swimming, resting. Your travel agent will be glad to help you plan a vacation cruise to Hawaii on the new Lurline.

Matson Lines Offices: New York Chicago San Francisco
Los Angeles Seattle Portland San Diego Honolulu

Matson
TO HAWAII